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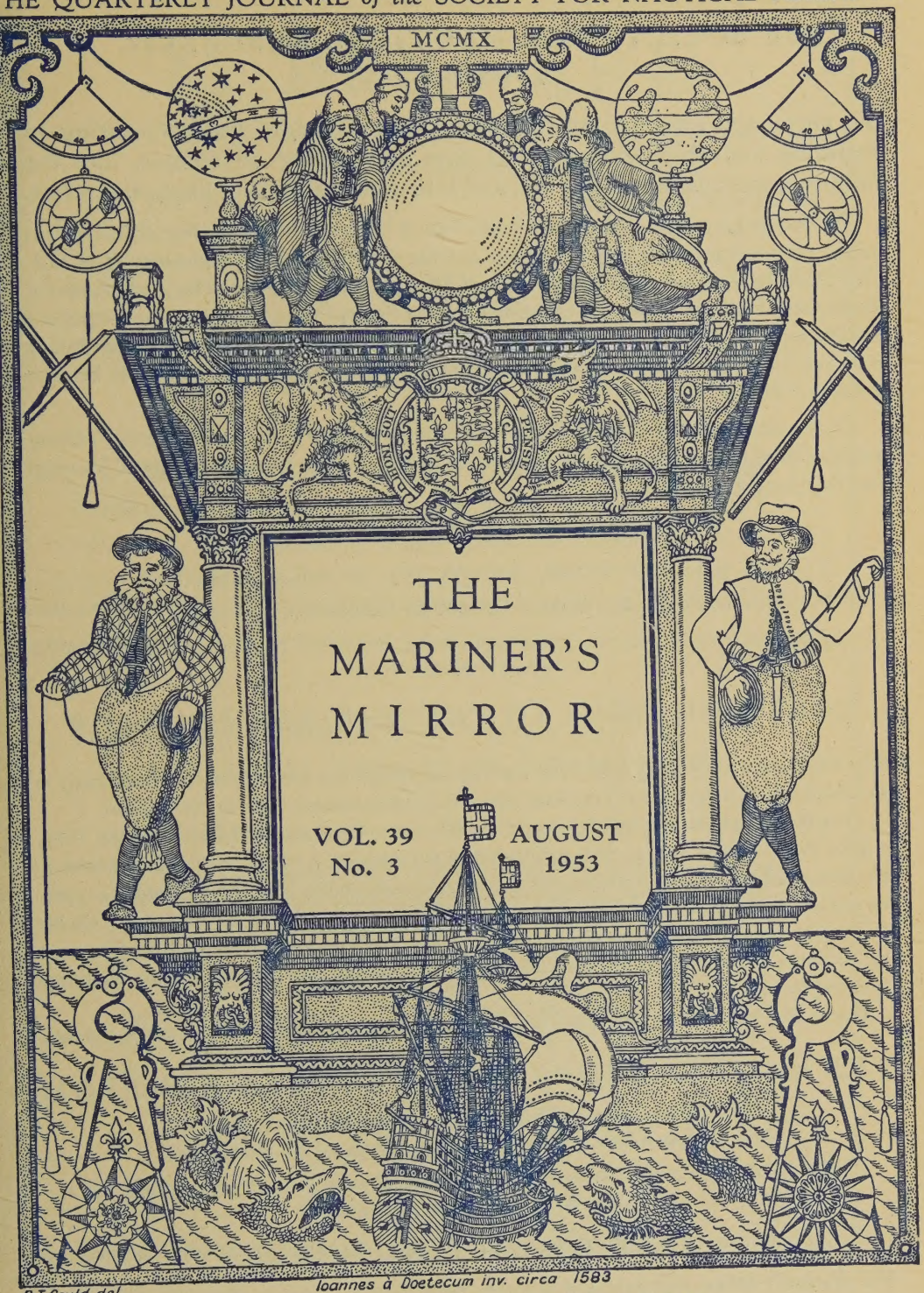

THE MARINER'S MIRROR

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AUGUST 1953

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Names of ships should be underlined to denote *italics*, and not written within inverted commas.

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after the manner of their use in all ages and among all Nations

VOL. 39. NO. 3 August 1953

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IMPORTANT NOTICE
TO
CONTRIBUTORS AND CORRESPONDENTS

From the end of the editorial year 1953, Mr G. R. G. Worcester is relieving Commander Mead in the office of Hon. Editor. From the date of this issue, August 1953, all matter for future publication in *The Mariner's Mirror* must be addressed to the new editor:

G. R. G. Worcester, Esq.
Penny Cottage,
Pound Lane,
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Copy for Articles, Notes, Queries, Answers and Reviews must be sent to him accordingly. Other correspondence for the Editor should be sent to 4 Eliot Place, S.E. 3, until 1 November 1953.

H.M. TORPEDO-RAM *POLYPHEMUS*

By C. J. Greene

BETWEEN the years 1860 and 1880, when the ships of the Royal Navy were undergoing that great sea-change from sail to steam, discussions were going on, not only in our own naval administration but in all the naval administrations of the world, as to the various types of vessels required to make up the perfect fleet.

Among the various types suggested was the 'Ram', one of its chief advocates being Admiral Sir George Sartorious. The type of vessel recommended by him was a ram pure and simple, and in a pamphlet which he published he stated: 'My reason for refusing guns to the ram is that there should be no possible cause or temptation to distract the attention of the commander from the Ram Power.' Sir George also pointed out that the feats of the American monitor *Merrimac* and the sinking by ramming of the ironclad *Re d'Italia* at the battle of Lissa thoroughly confirmed the power and invincibility of the ram.

This theory was upheld in its entirety by such experts as Rear-Admiral Scott, Admiral Randolph and Captain the Hon. E. R. Fremantle among others, and their ideas crystallized on a medium-sized vessel having great speed, high turning and manoeuvring qualities, and a low freeboard, so as to present a small target to the enemy, especially when bows on. The ship was to have no guns except a few light Q.F.'s to ward off boat attack. In fact 'The vessel itself was to be the projectile and the charge behind it the power of the engines'.

It was suggested that for a comparatively small sum of money a number of such vessels could be built and attached to a fleet, and could in the confusion and amid the smoke of a general engagement create havoc, by rushing in at high speed and ramming the large battleships of the enemy, unhandy on their helm and already disabled by gun or torpedo.

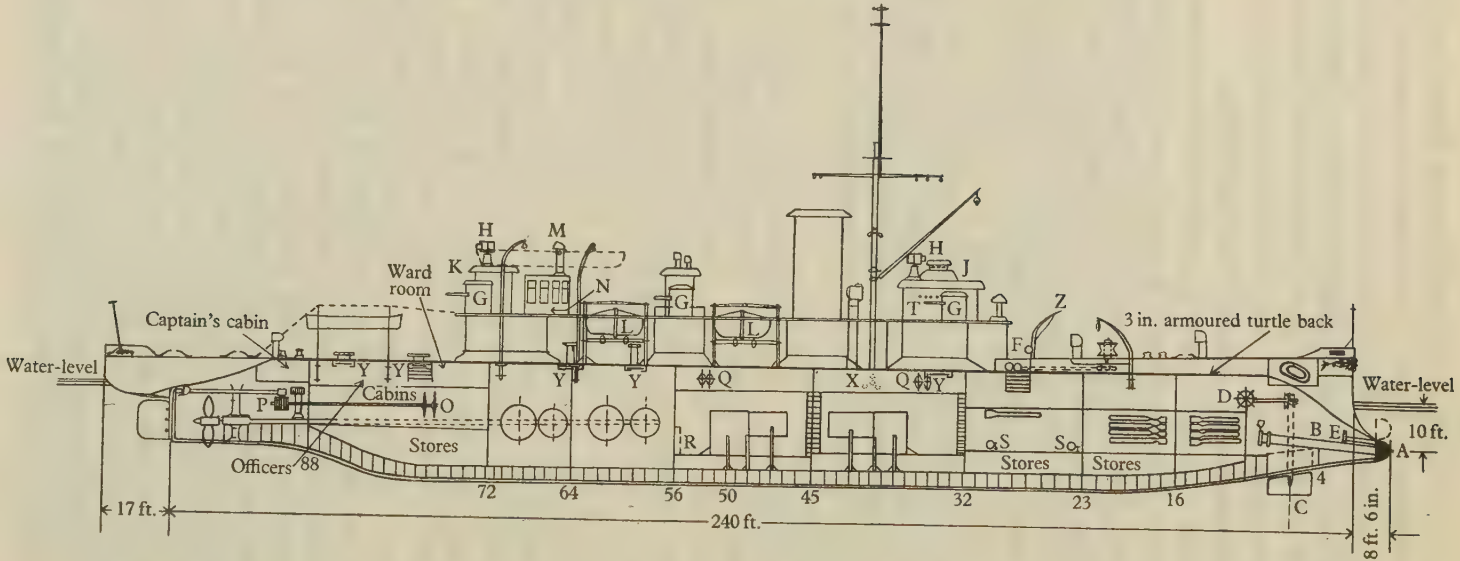
As a result of these views a vessel combining all these qualities to the full was designed by Mr H. Barnaby, C.B., the then Director of Naval Construction. The leading features of this vessel were her powerful ram, great speed and handiness, moderate size and low freeboard. Her appearance at sea was that of a cylinder, very deeply immersed, tapered at the ends and flattened over a large portion of its area to form a deck. The whole of this

flattened surface was protected by Whitworth steel armour presenting with the skin of the vessel a total thickness of 3 in. This armour was carried down her sides to a depth of approximately 7 ft. below the water-line. Below this point the section assumed a V-form, the complete cross-section being similar to that of a peg-top. The very low freeboard, aided by the convex form above water which would cause the deflection of any projectile that might strike her, made the vessel a very poor target, especially at night time.

She was 240 ft. long between perpendiculars, 40 ft. in extreme breadth, with a mean draught of 20 ft. Her freeboard forward was 10 ft. and aft, 5 ft. Displacement 2640 tons. The highest part of her convex armour deck was 5 ft. above the water-line. The engines, built by Humphrey and Tennant consisted of two sets of horizontal direct-acting compound engines driving twin two-bladed outward-turning propellers. The diameter of the H.P. cylinders was 38 in. and that of the L.P. cylinder 64 in.; stroke 54 in. Her speed was 17 knots at full power, the engines developing 3000 H.P. N.D., and 5500 H.P. F.D. Steam was supplied at 120 lb. per sq.in. from ten locomotive-type water-tube boilers fired fore-and-aft. The coal supply was just over 200 tons which gave her a steaming radius out and home at crusing speeds of about 550 miles.

The only offensive weapons were six Nordenfeldt Q.F. guns on the hurricane deck and a powerful armament of submerged torpedo-tubes, two on each broadside and one in the bow. The torpedoes were 14-in. Mark 2. The real weapon of offence was her extremely powerful ram. This projected 10 ft. 6 in. and was 10 ft. below the water-line. A peculiar and unique feature of this ram was that it was completed with a cast steel conical cap which closed the outer end of the bow torpedo-tube. This cap was operated and opened upwards by means of a wheel and spindle, thus presenting an open tube. The bow torpedo was then fired and the cap immediately closed ready for ramming. Above the armoured hull was a hurricane deck extending for about two-thirds of the length of the vessel. Communication between the hurricane deck and the armoured hull was made through the armoured conning-towers and turret, all of which, together with the coffer-dam surrounding the funnel, were protected at the base by glacis plates. The vessel was built throughout of steel and constructed on the system of transverse bracket frames and continuous longitudinals. She had a double-bottom throughout her length right up to the upper deck. The double-bottom was split up into a large number of cellular spaces, and the hold was divided by a longitudinal bulkhead, and numerous transverse bulkheads. Each set of engines and each group of boilers were arranged in watertight compartments, communication between them being arranged by hinged W.T. doors. The cabins for the captain and officers, as well as the ward-room, and

H.M. TORPEDO-RAM *POLYPHEMUS*



Profile

KEY TO FIGURES

A. Armoured cap
B. Bow torpedo-tube
C. Bow rudder
D. Hand steering and raising gear for bow rudder
E. Spindle for raising armoured cap
F. Steam capstan engine
G. Turrets for 1 in. Nordenfelt Q.F. guns
H. Searchlights
J. Forward conning-tower
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M. Standard compass
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O. Hand steering wheel for after-rudder
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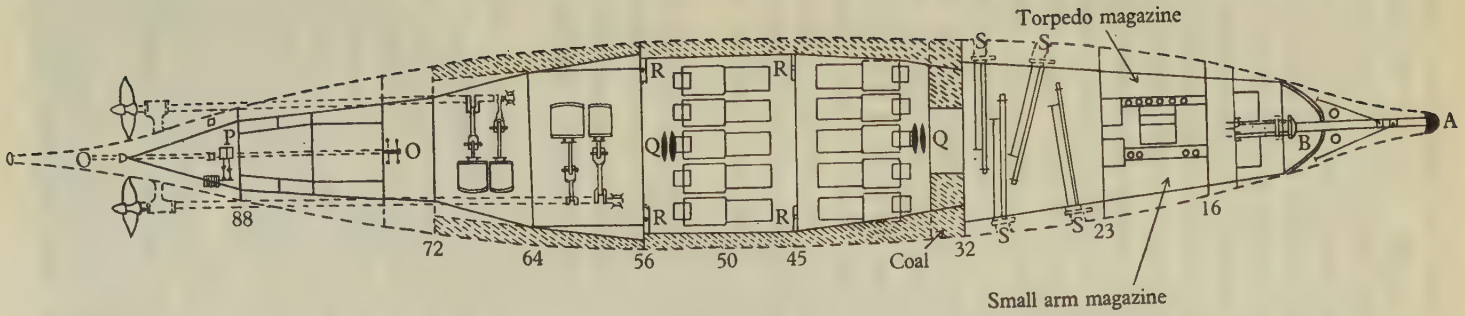
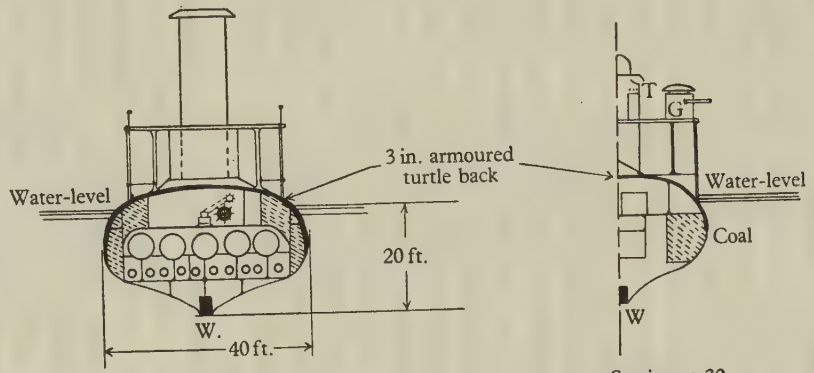
R. Watertight doors between engine and boiler rooms
S. Broadside submerged torpedo-tubes
T. Balance weight hydraulic release gear
W. Cast-iron balance weights in keel
X. Dynamo
Y. Armoured hatches in turtle-back
Z. Torpedo davit



Plan of hold



Section at 50

Section at 32

the accommodation for the crew, were all below the water-line, entailing continuous artificial lighting, and forced air supply. The air was supplied by two groups of two powerful centrifugal fans situated in a flat above the boiler-rooms. One of the most remarkable and novel features of this vessel was the system of balance weights attached to the keel. The bottom plating on each side, instead of ending in a keel or flat keel plate, at the middle line, was recessed, forming a rectangular groove. Inside this groove were fitted a number of cast-iron ballast blocks, the total weight of this ballast being 250 tons. In the event of damage to the hull in action, one or all of these weights could be released, it being intended that the weight released should be the one below the damaged compartment. The weight of the block was equivalent to the weight of water that entered the damaged compartment, thus restoring the vessel to her original trim. The dropping of the whole of the blocks would enable the vessel to float about 14 in. higher. In view of the very low freeboard and consequent small reserve of buoyancy the fitting of these weights made a great addition to the safety of the vessel as well as adding very considerably to her stability. These weights were held and locked in position by both hydraulic and hand gear. The hydraulic gear was operated from inside the forward conning tower, and the hand gear from stations inside the hull. It was the practice to operate the hydraulic and hand gear on alternate General Quarters days. Both sets of gear operated at the same time would have dropped all the weights.

Another special feature was the bow rudder. This was worked by hand only, and normally was drawn up into the cavity shown in the profile of the vessel. This rudder was fitted to assist in giving great manoeuvring and turning power, such power being essential in a vessel designed specially for ramming.

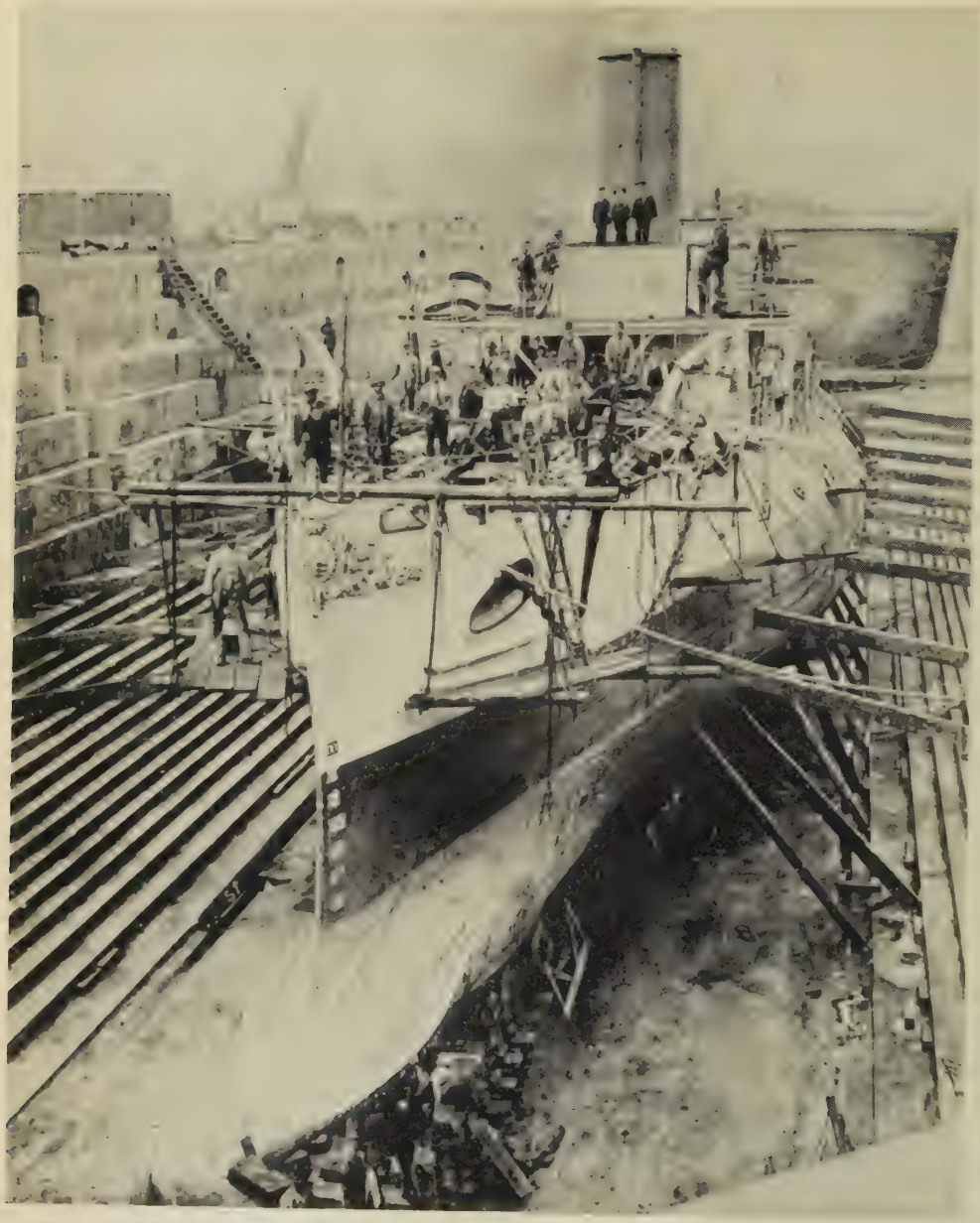
The *Polyphemus* carried five anchors, two of 45 cwt. each on her bill-boards, and three of 11 cwt. each lashed down by the funnel casing. She was fitted with two special flat-bottomed life-rafts, 32 ft. long, 11 ft. beam, and 4 ft. deep. These rafts were carried on cradles below the hurricane deck, and the cradles could be tilted so that the rafts could be slid down into the water on either side. These rafts could carry sixty men each and were always launched at the favourite manoeuvre of 'Abandon Ship', carried out very frequently. In addition she carried two 30-ft. whalers, a 14-ft. dinghy, and a small steam-cutter.

Other peculiarities were that she was always painted war-time grey, the only ship of her time thus painted, and that she had an engine-room complement greater than her deck complement.

Such are the details of this remarkable vessel. She was fully employed on sea service for her whole life of twenty years. No other vessel of her type

H.M.S. *POLYPHEMUS* ALONGSIDE THE MOLE AT GIBRALTAR

PLATE I



THE TORPEDO-RAM *POLYPHEMUS* IN DRY DOCK
(*By permission of the Trustees, National Maritime Museum*)

was ever constructed for the Royal Navy and no other vessel has ever borne her name since she was paid off for the last time at Chatham and broken up.

The building of the *Polyphemus* was commenced in Chatham Yard in September 1878, and the launch took place in June 1881. She was launched and named by Mrs G. O. Trevelyan, wife of the Secretary of the Admiralty, in the presence of thousands of spectators. There was a large and distinguished company present, including, among others, Admiral Sir George Sartorious, Sir Houston Stewart and Brandeth, the Admiral-Superintendent of the Yard, the Colonel-Commandant of the Royal Marines, and representatives of many foreign Governments.

She was built and launched under the superintendence of the Chief Constructor of Chatham Yard, Mr R. P. Saunders, and the senior Foreman, Mr Penney. She was launched with all her engines on board.

When completed for service she was sent to Bantry to test and break, if possible, the boom at Berehaven. This she successfully did. She steamed full speed against the boom and severed it without the slightest difficulty. No damage was done to the ship and no casualties occurred among her officers or crew, either on deck or below. It had been expected that the steel hawser of the boom might ride up the ram-shaped bow and sweep the decks. But nothing of the sort occurred. She just slowed down gradually and by her great momentum then cut clean through the boom. After this her service was confined entirely to the Mediterranean. Her base was at Gibraltar. During the South African war she was employed continuously patrolling the Straits, chiefly at night; and she frequently steamed well down the west coast of Africa. Her war-time paint and low freeboard made her eminently suitable for such work.

The *Polyphemus* could not be described as a comfortable vessel in any sense of the word. When at sea her hull was practically hermetically sealed by 3 in. armoured hatches sliding over the openings in her armoured turtle-back. The resulting heat below, especially in light following winds, while causing extreme discomfort in cabins and ward-room, made life in the engine-room and boiler-rooms almost unbearable, the temperature rising to 140° F.

As a sea boat she was an enigma. She was at her worst in a short steep sea, especially on her beam. Her rolling, though never severe, was uncertain and jerky. Frequently she would remain perfectly steady for a time, and then she would go over with a jerk and remain at a considerable angle for some time. In a really big sea, with a wave length and height such as she experienced on her passage home from Gibraltar to Plymouth, she rode the waves much more comfortably, though of course her hull was buried in the sea, and the only safe place was on her hurricane deck.

Her behaviour in a head sea can be well understood when it is realized that the weights in her keel of 250 tons were fitted towards the extremities, no blocks being fitted for a distance of 60 ft. amidships, namely, under the engine- and boiler-rooms.

One great difficulty in her engine-room department was the arrangement of her bunkers. It was almost impossible to get any coal out of her upper bunkers until the lower ones were worked out. The labour thus involved in the heat of her boiler-rooms was excessive, and there was, of course, a very great reduction in her stability when at sea, with her upper bunkers full, and the lower ones empty.

There was also considerable trouble in working her capstan engine if she was lying in an exposed anchorage, plunging her bows under. The engine was situated in a small, totally enclosed compartment, under the forecastle deck, and the chief stoker working the engine was often nearly asphyxiated and had to be relieved before the anchors were broken out.

On the other hand the *Polyphemus* had her good qualities. She was very easy and quick on her helm, even without her bow rudder. Her engines, though of the old horizontal type, ran smoothly without any trouble. Her starting and reversing gear was simple, efficient and speedy.

She had a most talented amateur dramatic society known as 'The Sons of Neptune', and the performance they gave of that famous old nautical play 'Captain Reece of the *Mantlepiece*' in the Garrison Theatre at Gibraltar, will never be forgotten by those who saw it. On returning to Chatham, where she had been built twenty years previously, she was paid off for the last time and soon afterwards broken up.

The only relic of this famous ship, her gilded weather-vane in the shape of a torpedo, known in practically every port up the Straits, now adorns the top of a flagstaff in my garden.

[Our member, the author of the foregoing article, was an engineer officer, Royal Navy, who served in the *Polyphemus* during her last two commissions. Ed. *M.M.*]

THE ENGLISH FLEET AT THE BATTLE OF PORTLAND

By R. C. Anderson

AMONG the manuscripts of the National Maritime Museum are two volumes in modern binding lettered 'Collections for a History of the Navy, 16th-18th Cent.'. These were at one time the property of Captain William Locker, R.N., who died in 1800, and contain a large number of transcripts from originals mostly to be found in the British Museum. References are by no means always given and the document shortly to be described is one of those with no note of origin; it may have come from the British Museum or it may not.

On two sheets it purports to give a 'List of the Ships and Captains that engaged the Dutch the 18th, 19th and 20th Febry 1652'. Actually, however, it only deals with the first two squadrons and ignores the third under Penn; it will be seen also that it puts Deane in command of the second squadron, whereas Monk was really in that position. Still, taken in conjunction with the list of Penn's squadron printed in Vol. IV of *The First Dutch War*, it gives a much nearer approach to an authoritative list of the whole English fleet at Portland than anything that has appeared so far.

When I came across this document, I quite thought that I had unearthed something previously unknown, but I soon discovered that it, or its original, must have been known to Charnock, when he was compiling his *History of Naval Architecture* more than 150 years ago. The document immediately preceding that under consideration is 'A List of All Ships, Frigates and other Vessels belonging to the State's Navy the 27th December 1653 with their Captains—Note Peace concluded with the Dutch the 5th April 1654'. This list, with precisely the same heading, is printed on pp. 382–6 of Vol. II of Charnock's work and is followed on p. 387 by a note that 'the following [additional] vessels... formed part of the fleet... which engaged the Dutch on the 18th, 19th and 20th of February 1651' (*sic*), the ships listed being the merchantmen from the first two squadrons in exactly the same order as in the two full lists and with the same peculiarities of spelling. No mention is made of the merchantmen in Penn's squadron; evidently Charnock's source did not include them.

This would be almost enough to prove that Charnock used the collection of manuscripts in question, and a reference to the *Dictionary of National Biography* makes it practically certain that he did, for there we find it stated

that 'Locker... probably shrank from... reducing his accumulated stores to form. He handed them over to John Charnock...', who used much of Locker's material in his *Biographia Navalis* and some, evidently, in his other great book.

With this much by way of introduction we can come to a consideration of the new material thus made available. As will be seen later, the first squadron is given twenty ships, the second twenty-one and the third (Penn's) thirty-one. We know that a few ships not included in these lists were present in at least the later stages of the action, but these were certainly not enough to bring the three squadrons to anything like equality in numbers and it seems strange that Penn should have been given so much the largest squadron. At first sight there is a temptation to suggest that it was originally intended to have two squadrons only, the first under the direct command of the three Generals in the *Triumph* and the second under Penn, but this explanation is shown to be very wrong by the fact that the Instructions given to Penn simultaneously with the list of ships to be under his command speak quite definitely of three squadrons under the Generals, the Vice-Admiral [Penn] and the Rear-Admiral [Lawson].[1] At the same time, to make matters worse, the Generals wrote that, although they had divided the fleet into three squadrons, they could not, with the ships within reach, allot more than fourteen ships to each, less than half the number included in the list just given to Penn.[2]

In this connexion it is of interest to consider the position of Monk and at the same time the order of precedence of the three squadronal colours. Monk was made a 'General at Sea' on 26 November 1652, three days *before* Blake's defeat at Dungeness, though it was not till 4 December that it was decided that he and Deane should actually take up or resume their appointments as such.

The simplest explanation of the arrangement by which Monk took charge of the second squadron, while Blake and Deane remained together in the first, would be by 'splitting' from a previous organization under which the three Generals acted jointly as Commander-in-Chief and Admiral of the Red, but it is more than doubtful whether this is what really happened. In the proposals formulated by the Commissioners for the Admiralty on 14 January 1652/3 for flags to be flown by the various Flag Officers of the fleet then being prepared it is quite clear that it was then expected that each General would command a separate squadron.[3] It is also seen that the three squadrons were to rank in the order Red, Blue, White, not (as they did for the next two centuries) Red, White, Blue.

1 *First Dutch War*, IV, 35.
2 *Letters of Robert Blake*, p. 200.
3 *First Dutch War*, III, 375.

Now the natural place for Monk as junior General would be in the third squadron and this, by the proposal of 14 January, would be the White, with Deane in the Blue and Blake in the Red. For some reason Blake and Deane decided to stay together and this left the position of Admiral of the Blue to be filled by Penn, the Vice-Admiral of the Fleet, who would otherwise have acted under the suggested arrangement as Vice-Admiral of the Red, with Lawson combining the posts of Rear-Admiral of the Fleet and Vice-Admiral of the Blue. Apparently Monk simply remained in command of the White squadron, or rather his squadron continued to wear white colours, and since he was clearly senior in rank to Penn, that squadron took the precedence formerly given to the Blue. It may be that the successful issue of the following battle helped to ensure the establishment of this order of the flags; at any rate it lasted far longer than the three squadrons themselves.

It seems that the new arrangement came into force on 10 February since that was not only the date on which 'Captain William Penn, Vice Admiral of the Fleet' was 'authorised and desired to command' a squadron, but also the last day on which letters or orders were signed by all three Generals, those of the 12th and 22nd being signed by Blake and Deane only. It had probably been decided on a little earlier, for Perrin notes in his *British Flags* that the order of 4 February to hasten the supply of flags, mentioned them in the order Red, White, Blue.

After this digression it is time to give the lists of the three squadrons obtained from the two sources already mentioned. I have added indications of the flagships, but the arrangement in three columns is not in any way connected with an organization in three divisions; it is merely a matter of convenience.

Altogether there are seventy-two names. There is no doubt that several ships not included here did take part in the series of actions, but on the other hand some ships in the list certainly did not; the *Portsmouth*, *Expedition* and *Tenth Whelp* can be struck out at once. The first of these was lying at Portsmouth 'in expectation of the money' on 17 February and was to be sent out 'as soon as possible'.[1] When she brought a French prize into Portland on the 25th it was expressly stated that she 'was not in the fight'.[2] The *Expedition* was still at Portsmouth on 20 February and the *Tenth Whelp* only left there that morning,[3] by which time the two fleets were well to the eastward. The case of the *Speaker's Prize* (or *Sophia*) is difficult; when I wrote on this same subject in 1938,[4] I pointed out that orders for her fitting out were issued as late as 18 February, but actually similar orders had already been given on 12 January and her captain and master had both

1 *First Dutch War*, IV, 62.
2 *Ibid.* p. 157.
3 *Ibid.* p. 62.
4 *M.M.* p. 441.

FIRST SQUADRON, ADMIRAL BLAKE ON BOARD*

Triumph (Ad.)	*Nonsuch*	*Hound*
Fairfax (V.-Ad.)	*Portsmouth*	*Mermaid*
Worcester	*President*	*Crescent*
Laurel (R.-Ad.)	*Duchess*	*Prosperous*
Sussex†	*Princess Mary*	*William and John*
Foresight	*Tulip*	*Hannibal*
Sapphire	*Arms of Holland*	

SECOND SQUADRON, ADMIRAL DEANE ON BOARD ‡

Vanguard (Ad.)	*Amity*	*Golden Fleece*
Rainbow (V.-Ad.)	*Diamond* (R.-Ad.)	*Maidenhead*
Pelican	*Pearl*	*Malaga Merchant*
Lion	*Paul*	*Society*
Entrance	*Mary prize*	*Jonathan*
Tiger	*Oak*	*Katherine*
Adventure	*Fortune*	*Cygnet*

THIRD SQUADRON (PENN)

Speaker (Ad.)	*Expedition*	*Speaker's Prize*
Victory (V.-Ad.)	*Gift*	*Merlin*
Convertine	*Tenth Whelp*	*Richard and Martha*
Kentish	*Centurion*	*Reformation*
Advice	*Convert*	*Ann and Joyce*
Assistance (R.Ad.)	*Waterhound*	*Charles*
Dragon	*Nightingale*	*Giles*
Assurance	*Sampson*	*Providence*
Ruby	*Plover*	*Chase*
Success	*Paradox*	*Thomas and William*
		Elizabeth and Ann

* Should be Blake and Deane.
† MS. has *Essex*.
‡ Should be Monk.

been appointed by 8 February.[1] Apart from this, it seems probable that the ships entrusted to Penn on the 10th were either known to be available in the River or expected to join from Portsmouth. Her name should perhaps remain in the list.

When it comes to adding new names, it will be as well to take no notice of the 'Letter from the *Eagle*'.[2] This printed account gives what is said to be a list of Blake's (Red) squadron, ignoring Deane, but includes in it Penn's flagship as Admiral of the Blue and the two flagships of the Vice- and Rear-Admirals of the White. It also includes the *James*, which is known to have been still fitting out at Portsmouth, and the *Satisfaction*, which was somewhere in the neighbourhood of Newcastle,[3] besides several

1 *Cal. S.P. Dom.* 1652/3, pp. 515, 528.
2 *First Dutch War*, IV, 100.
3 She was at Newcastle on 25 February, having taken seven *weeks* from Hull. *Cal. S.P. Dom.* 1652/3, p. 537.

ships allotted to the White or Blue squadrons in the lists printed above. I can find no other reference to the *Angel* save as a merchantman about to leave for the Mediterranean, while the *Ruth* is only recorded as having been with Ayscue at Barbados. As for the *Roebuck*, one ship of the name was at Portsmouth unfit for further service and another was hired a month after the battle;[1] even the *Eagle* herself is suspect, because the contract in her case was not concluded until 16 April. The *Discovery* and *Old Warwick* are also doubtful, to say the least; the *Discovery* seems to have belonged to the Irish squadron,[2] the *Old Warwick* was still at Gravesend without a captain on 16 February.[3] Altogether three ships out of four in this list seem to have been either elsewhere or at least in other squadrons.

Instead of this very doubtful authority we can use the various letters describing the movement of ships down the River or through the Downs after the departure of the main fleet. First we learn that on 10 February the *Rainbow*, *Gillyflower* and *Middleborough* were about to leave Queenborough with the *Dolphin* and *Thomas and William* following from Chatham.[4] The first and last of these names have already appeared and as a matter of fact the *Middleborough* did not sail for at least another ten days,[5] but the *Dolphin* and *Gillyflower* can certainly be added to the list.

We know also the dates on which a number of other ships left or passed Gravesend on their way to the Downs; these come from several different letters[6] and are best shown in a single table:

11 February	*Katherine*.
12 February	*Martin*.
13 February	*Cygnet* and *Nightingale*.
14 February	*Thomas and Lucy*, *Exchange* and *Welcome*(?).
15 February	*Raven*, *Centurion*, *Brazil Frigate* and *Cullen*.
16 February	*Lisbon Merchant*.

The *Welcome* is a little uncertain. She was aground above Woolwich on the 11th, but was expected to get off on the next tide. Bourne's letter of the 16th says there was then 'none but the *Warwick* to follow', and though this might possibly mean that the idea of sending the *Welcome* to sea had been abandoned, it seems more likely to mean that she had actually sailed.

The *Centurion* and *Nightingale* have appeared already in the list of the Blue, and the *Cygnet* in the White; the other nine ships are new. I think we can accept them together with the *Dolphin* and *Gillyflower* as having been at any rate expected to take part in the coming battle.

1 *Ibid.* pp. 510 and 550.
2 *Ibid.* pp. 26 and 305.
3 *First Dutch War*, IV, 59.
4 *Ibid.* III, 452.
5 *Ibid.* IV, 76.
6 *Ibid.* IV, 44, 54, 55, 59.

How many of them actually did so is another matter. Both the *Martin* and the *Nightingale* are known to have taken part in the first day's fighting[1] and the *Exchange* took a prize at some stage of the action, as did the *Ann Piercy* and *Mary* ketch, two vessels not previously mentioned;[2] as to the others there is no certainty. The *Centurion*, *Raven*, *Dolphin*, *Cullen*, *Thomas and Lucy* and *Brazil Frigate* were in the Downs on 16 February about to sail to the westward and the *Sapphire* (of the Red squadron) had been seen off Dungeness on the 15th with six other ships also 'plying after the fleet'.[3] These six ships must have been some of those which had sailed between the 10th and 14th, but it is impossible to name them; all we know is that the *Sapphire* with two merchant ships joined the fleet in the night of the 18th (after the first day) at the same time as the *Diamond* from Portsmouth.[4] Since the third day's action took place to the eastward of Beachy Head, it seems more than likely that the *Centurion* and her consorts were in time to take a share then, if not on the day before. Even the *Lisbon Merchant* may perhaps have done so, though that is less probable.

Four more names may be classed in descending order as certain, probable, possible and very doubtfull. The *Advantage* was certainly engaged, because she is described as 'much shattered in the fight'.[5] The *Guinea* is not actually said to have been present except in the 'Letter from the *Eagle*', but she was ready for sea and awaiting orders 'in the bay' (probably Stokes Bay) on 15 February and there is a mention a month later of the destitute state of her master's widow, though it is not stated that he had died in action.[6] As to the *Nicodemus* it is impossible to be sure; she also depends on the 'Letter from the *Eagle*' and otherwise is only mentioned as at Portsmouth 'much out of repair' on 19 January.[7] The *Providence* (man-of-war), which I suggested as an addition in 1938, was probably too late to take part in the action; she only left Spithead on 19 February.[8] On the whole I would suggest including the *Advantage* and *Guinea* and considering the *Nicodemus*, *Providence* (man-of-war) and the *Lisbon Merchant* (see above) as possibles but not probables.

It seems unnecessary to give a new complete list. The reader can make one for himself, if sufficiently interested. Such a list can also be produced by amending either Mr Atkinson's, printed in his introduction to Vol. IV of *The First Dutch War*, or mine in *The Mariner's Mirror* for October 1938. In either case the *Mermaid*, *Crescent*, *Golden Fleece*, *Maidenhead*, *Malaga Merchant*, *Society* and *Jonathan* must be added and the *Discovery*, *Eagle*,

1 *First Dutch War*, IV, 87 and 91.
2 *Ibid.* pp. 136–7.
3 *Ibid.* p. 60.
4 *Ibid.* p. 81.
5 *Ibid.* p. 150.
6 *Cal. S.P. Dom.* 1652–3, p. 548.
7 *Ibid.* p. 519.
8 *First Dutch War*, IV, 85.

Angel, *Roebuck* and *Ruth* deleted. The *Satisfaction*, *Old Warwick* and *Tenth Whelp* should also be removed from Mr Atkinson's list and the *Providence* (man-of-war) from mine, while other additions are the *Mary Prize*, *Fortune*[1] and *Hound*[2] in the first case and the *Princess Maria*, *Arms of Holland*, *Hannibal*, *Paul*, *William and John* and *Speaker's Prize* (*Sophia*) in the second. The result will be a list of eighty-three names. It would be too much to hope for complete accuracy, but I think at least eighty of the ships included must have taken some part in the series of actions.

1 A ship taken from a pirate in 1652, distinct from the fireship and from the Dutch prize which became the *Cardiff*.

2 See *M.M.* 1938, p. 141.

LIEUTENANT EDWARD GRIFFITHS AND THE FRANKLIN EXPEDITION

By A. G. E. Jones and R. J. Cyriax

WHEN Captain Sir John Franklin sailed from the Thames in May 1845 with H.M. ships *Erebus* and *Terror* to seek a north-west passage, he was accompanied to Davis Strait by a transport, the *Barretto Junior*, which was placed under his orders for the purpose of conveying some of the stores intended for him. This arrangement seems to have had two purposes; to enable the *Erebus* and *Terror* to enter the ice with the largest possible amount of stores, and to safeguard them from the dangers to which they would have been exposed in the Atlantic if they themselves had conveyed all the stores from Great Britain.[1]

The *Barretto Junior* was in the charge of Lieutenant Edward Griffiths, R.N., Agent Afloat of the Transport Service. He was born at Plymouth in July 1792. He entered the Royal Navy in April 1803 and served first, but only for a short time, in H.M.S. *Gladiator*, the flag-ship of Rear-Admiral John Holloway. During the following year he was in H.M.S. *Magnificent* when she was wrecked off Brest, and in 1806 he was wounded during the capture of four Spanish ships near Havana. He was present at the taking of Copenhagen in 1807 and at the capture of Samana (San Domingo) in 1808. When serving as mate in H.M.S. *Tonnant*, he took part in all the Chesapeake Bay operations and was with the rocket brigade during the attacks on New Orleans. He was promoted to the rank of Lieutenant on 2 February 1815. He subsequently served in the Transport Service. After being on half-pay for about fourteen months, he was appointed to the *Barretto Junior* and placed under Franklin's orders, on 18 April 1845, when the *Erebus* and *Terror* were being equipped at Woolwich Dockyard.[2]

The *Barretto Junior*, a barque of 523 tons, built at Calcut in 1818, was owned in 1845 by Joseph Somes, of 35 Broad Street, Ratcliffe, and Mile End, London.[3] Her master was Mr Iden Huggins. She underwent some

1 Cf. Sir W. Edward Parry, *Journal of a second voyage for the discovery of a North-West Passage* (London, 1824), p. ix.

2 W. R. O'Byrne, *A Naval biographical dictionary*, London, 1849, p. 434; *The Times*, London, 2 January 1884; *The Morning Post*, London, 3 January 1884; *The United Services Gazette*, London, 5 January 1884.

3 *Lloyd's Register of British and Foreign Shipping*, 1845; *The Post Office London Directory*, 1845.

repairs in 1844 but had not been constructed with a view to navigation amid ice, and was not specially strengthened. The orders received by Franklin with respect to her were as follows: 'On putting to sea, you are to proceed, in the first place, by such a route as, from the wind and weather, you may deem to be the most suitable for despatch, to Davis Strait, taking the transport with you to such a distance up that Strait as you may be able to proceed without impediment from ice, being careful not to risk that vessel by allowing her to be beset in the ice, or exposed to any violent contact with it; you will then avail yourself of the earliest opportunity of clearing the transport of the provisions and stores with which she is charged for the use of the expedition, and you are then to send her back to England, giving to the agent or master such directions for his guidance as may appear to you most proper, and reporting by that opportunity your proceedings to our secretary, for our information.'[1]

The Admiralty decided to provision the Franklin expedition for three years. Each of the discovery ships, when she left the Thames, conveyed stores for two years; the remainder of the stores was stowed on board the *Barretto Junior*. The expedition left Greenhithe on 19 May 1845, and proceeded towards the Atlantic by way of the North Sea. The transport had shipped at Woolwich ten live bullocks which Franklin intended to slaughter when he reached the ice and to freeze the meat, but four bullocks died during a storm in the North Sea. They were replaced at Stromness, where the expedition stayed for about two days. The voyage across the Atlantic was stormy, but in other respects uneventful. On 16 June Griffiths dined with Franklin on board the *Erebus*. The transport parted company with the *Erebus* and *Terror* when in a thick fog on 27 June, but rejoined them a day or two later. On 4 July the squadron reached the Whalefish Islands, the most northerly point in Davis Strait to which Franklin thought it advisable to take the *Barretto Junior*. She was at once taken alongside the discovery ships, and the task of transferring the stores was begun. Two published sketches, one by Commander Fitzjames of the *Erebus*,[2] the other by Lieutenant Irving of the *Terror*,[3] depict the three ships at the Whalefish Islands, but both sketches show only the masts and rigging and a very small part of the hull of the *Barretto Junior*.

Transferring the stores required a much longer time than had been expected and did in fact need six whole days, despite fourteen hours' work a day. The principal difficulty was not to unload the stores from the transport, but to stow them on board the *Erebus* and *Terror*; and when at last the

1 Parliamentary Paper, Instructions to Captain Sir John Franklin (London, 1848), p. 3.
2 *The Polar Record* (Cambridge, 1949), Nos. 37, 38 (frontispiece).
3 B. Bell, *Lieutenant John Irving, etc.* Edinburgh, 1881, p. 129.

work had been completed, the decks of both ships were crowded with casks and coal and their cabins were nearly filled. As Griffiths himself declared: 'The two ships were perfectly crammed.'[1] On 11 July the transport was removed from the *Erebus* and *Terror*, and Griffiths began his preparations for his own return home.[2] The manner in which he had discharged his duties met with the entire approbation of Franklin, whose official despatch written on 12 July at the Whalefish Islands and brought to England by Griffiths, included the following commendation: 'The transport will sail for England this day. I shall instruct the agent, Lieutenant Griffiths, to proceed to Deptford, and report his arrival to the Secretary of the Admiralty. I have much satisfaction in bearing my testimony to the careful and zealous manner in which Lieutenant Griffiths has performed the service entrusted to him, and would beg to recommend him, as an officer who appears to have seen much service, to the favourable consideration of their Lordships.'[3] Franklin gave a testimonial to Mr Huggins,[4] the Master of the *Barretts Junior*, and mentioned in a letter to Lady Franklin that he was sending her some sealskin articles of Eskimo workmanship. 'Lieutenant Griffiths', he added, 'the agent of the transport, will kindly take charge of them for you. I shall ask him to call at Bedford Place, for the purpose of seeing you or some member of the family. He is an intelligent person, and will give you full particulars of our progress hitherto.'[5]

Griffiths was the last officer in the Royal Navy to bid Franklin and his officers and men farewell, and their letters which he took with him were the last that were received, for although the *Erebus* and *Terror* happened to meet two British whaling ships in Baffin Bay about a fortnight after they had sailed from the Whalefish Islands, neither Franklin nor his officers entrusted any letters to the captains of these whalers. On Friday, 12 July Griffiths dined on board the *Erebus*,[6] and then, leaving her and her consort at the Whalefish Islands, set sail for England. The voyage home seems to have been uneventful. He reached Margate by way of the English Channel

1 Quoted by Sir Albert H. Markham, *Life of Sir John Franklin*, London, n.d., p. 208.

2 Commander Fitzjames's 'Journal', June 8, 16, 27, 29, 1845, and letter to Mr Coningham appended to the 'Journal', *The Nautical Magazine*, London, 1852, pp. 158–65, 195–7. The 'Journal' gives full details of the voyage during the period June 6 to July 11. It was apparently first published in a paper called *The Leader*, and was reprinted several times. See also H. D. Traill, *The Life of Sir John Franklin*, London, 1896, pp. 347–50, and Franklin's official report in Parliamentary Paper, pp. 50, 51.

3 Parliamentary Paper, pp. 50, 51.

4 This testimonial was sent from the *Erebus*, at the request of Mr Huggins, as the *Barretts Junior* was leaving the Whalefish Islands. Reynolds Collection, Library of the National Maritime Museum, Greenwich.

5 H. D. Traill, p. 349. Lady Franklin was then living at 21 Bedford Place, Russell Square, London.

6 Letter from Griffiths, *The Times*, London, 12 January 1852.

in twenty-seven days, which did not exceed the time usually required for the voyage, and he made no mention in his official report of any difficulties or dangers. This report was as follows:

H.M. Transport Barretto Junior.
Off Margate
August 8th. 1845.
9 a.m.

Sir,

I had the honour of addressing a letter to you yesterday on our passing thro' the Downs, but as it may not have arrived, I beg leave to repeat its contents—

H.M. Transport Barretto Junior.
Passing thro' the Downs.
Aug. 7. 1845.

Sir,

In writing this hurried letter as passing thro' the Downs, I have the honor to acquaint you for the information of my Lords Commissioners of the Admiralty, of our arrival from Davis Strait, Greenland, on our return to Deptford, having accompanied the Arctic Expedition Ships 'Erebus' and 'Terror' under Sir John Franklin, Knt., K.C.H., as far as Whale-Fish Island, Disco. We left them there on the 12th. ult., and I have great pleasure and satisfaction in adding, all in excellent health, high spirits, and full of hope as to their future success.

It was Sir John Franklin's intention to sail early the next morning in further prosecution of their arduous and enterprizing Voyage. I am charged with his Despatches and the Ships Letter Bags, and trust to land with them to-morrow at Gravesend and would have them sent by this boat, had there been a certainty as to immediate and safe conveyance.

I have the honor to be,
Sir,
Your obedt. humble servant,
Edward Griffiths, Lieut. R.N.

I have now further to add that during our stay at the Whale-Fish Islands we completed the Discovery Ships with three years Provisions and Stores, also as much Fuel as they could stow away.

We have brought Home 2 Bower Anchors, 2 Chain Cables, 1 Boat, 2 Hawsers, some casks of Rum, Beef and Pork, Coals, and various Return Stores not required by the Discovery Ships, and which will be specified in the Master's Bill of Lading, also four Invalided Men, named in the Margin of the enclosed Copy of Order for their passage.

The wind is blowing very fresh and directly against us, which I fear will prevent our arrival at Deptford for 2–3 days. By this conveyance (a Margate Boat) I have sent on shore the letter bags from the Discovery Ships to be forwarded immediately.

I have the honor to be,
Sir,
Your obedt. humble servant,
Edward Griffiths, Lieut. R.N.

H. L. Corry, M.P., Esq.[1]

The *Baretto Junior* reached Deptford on 11 August,[2] and her arrival there ended Griffiths's immediate connexion with the Franklin expedition. His subsequent services are briefly described on a later page.

1 Original report, Admiralty Records, Public Record Office, 'Arctic expeditions', 1845–8.
2 *The Naval and Military Gazette*, London, 16 August 1845.

During the ensuing eighteen months no more than ordinary anxiety was felt for Franklin's safety, but in February 1847 the Admiralty decided that if no news arrived by the end of that year active steps would be required, and it consulted some of the principal Arctic officers regarding the measures to be adopted should the necessity arise.[1] Griffiths does not appear to have been included among those asked to express their opinions, but in July 1847 he became anxious about the safety of the absent expedition, and sent a plan of relief with a covering letter to the Second Secretary of the Admiralty, then Captain W. A. B. Hamilton. Griffiths mentioned in this letter that he had been a great deal together with and the last to leave the expedition, and that he took the deepest interest in it. He suggested that one screw steamer and one sailing ship, both equipped for wintering in the Arctic, should be sent to Barrow Strait, and that land parties from these ships should then search the coasts lying to the westward. He recommended also that one or two ships, suitably equipped for wintering, should be fitted out immediately and sent during the autumn round Cape Horn so as to reach Behring Strait during the spring of 1848, in time for land parties to search from that strait in an easterly direction. He advised that all the land parties should be provided with pemmican and preserved foods of every kind, and with light canvas boats or very light whaleboats mounted on sledges with iron runners. Griffiths apparently feared that Captain Hamilton would consider visionary the suggestion of sending an expedition to Behring Strait, but he himself was confident that the absent expedition would be found either to the westward of, or more probably between, Banks Land and Wollaston Land, and therefore nearer to Behring Strait than to Barrow Strait. He thought that the proposed search expedition by land (a reference to Sir John Richardson's plan of sending boat parties down the Mackenzie River and then along the coast to the Coppermine River) would experience great difficulty in provisioning itself and would therefore be unable to take with it supplies for Franklin. But he believed that one or other of the land parties suggested by him would find the Franklin expedition, and lead its officers and men either to food depots or to the relief ships.[2]

This plan was obviously based on the assumption that Franklin had sailed southwards and westwards from the neighbourhood of Cape Walker, the route which he had been ordered to adopt, if practicable, in the first instance.[3] Griffiths offered no reasons for his conviction that Franklin was detained near Banks Land and Wollaston Land, the boundaries of which had not been determined when Franklin sailed, but some of his reasons can

1 Parliamentary Paper, pp. 21 *et seq.*
2 Admiralty Records, *loc. cit.*
3 Parliamentary Paper, pp. 3, 4.

be suggested. First, Franklin believed when he left England that much land existed between Banks Land and Wollaston Land (a conjecture that was proved a few years later to have been quite correct), and he hoped to find that this land consisted of islands separated by navigable channels.[1] Secondly, Franklin expected to meet the principal obstruction from ice between the 105th and 125th meridians of west longitude,[2] and the only parts of Banks Land and Wollaston Land that had been charted when he sailed, lay between those two meridians. Thirdly, he believed, in common with most Arctic explorers, that the water along the North American coast was as a general rule navigable every summer.[3] There is no evidence that Franklin mentioned any of these matters to Griffiths. But Franklin did discuss the expedition's prospects with the senior and probably with most of his other officers, some of whom dined with him every day;[4] and with every one of these officers Griffiths was personally acquainted. Lastly, Griffiths must have been perfectly aware of Franklin's having been told at the Whalefish Islands that the summer had started unusually early and was exceptionally mild, and that the ice in Baffin Bay was believed to be in a condition very favourable to navigation. Indeed, Commander Fitzjames believed that the expedition might reach Behring Strait before the onset of winter.[5] The foregoing considerations, coupled with the fact that the *Erebus* and *Terror* had apparently not passed through that strait by July 1847, may well have led Griffiths to suppose at that time that they had reached Banks Land or Wollaston Land probably in 1845, and had since then been beset in the vicinity, approximately in the meridian of 120° West.

Some of Griffiths's suggestions were certainly far-sighted, and several, in a modified form, were carried out by the Admiralty, but that their adoption was directly due to him seems very unlikely. His plan appears to have made very little impression on the authorities, for it was not published in any Parliamentary Paper concerning the Franklin search, and does not seem to have been the subject of an unpublished official commentary.[6] Moreover, the originality of his views is open to question. Several Arctic explorers, consulted by the Admiralty some months before he wrote to Captain Hamilton in July 1847, had offered comprehensive plans which

1 Letter from Franklin to Parry, *Memoirs of Rear-Admiral Sir W. Edward Parry*, The Reverend E. Parry, 5th edition, London, 1858, p. 280. Letter from Franklin to Richardson, *The Polar Record* (Cambridge, 1949), nos. 37, 38, pp. 348–50.

2 Franklin's report to Lord Haddington, quoted in *Sir John Franklin's last Arctic expedition*, R. J. Cyriax, London, 1939, pp. 24, 25.

3 S. Osborn, *Stray leaves from an Arctic Journal*, new edition, London, 1865, p. 292.

4 Commander Fitzjames's 'Journal', 6 June 1845; H. D. Traill, pp. 343, 344.

5 Parliamentary Paper, p. 50; Fitzjames's 'Journal', 6 July 1845.

6 The Admiralty Records appear to contain no official comments on Griffiths's suggestions.

included, amongst many suggestions, several which were very similar to his. Thus, Sir James Clark Ross in March 1847 advised sending two ships to Barrow Strait to follow the route which Franklin had been ordered to adopt.[1] Colonel Sabine, also in March 1847, made the same suggestion, and advised that one of the ships should be a steamer.[2] Captain Beechey's proposals, dated April 1847, included the despatch of two ships, both fitted with auxiliary engines and screw-propellers, to Barrow Strait in 1847, and the sending of another ship through Behring Strait as far as Icy Cape in 1848; and he advised that this ship should send a decked launch along the coast to the eastward as far as possible beyond Point Barrow before it returned to the ship.[3] Sir Edward Parry, in February 1847, recommended that a ship from the Pacific squadron should be sent to Behring Strait in 1848, and should despatch, if practicable, a boat along the coast to the eastward.[4] None of these suggestions appeared in print until April 1848, but that Griffiths was at least partly conversant with them is very probable. In July 1847 he was in England on half-pay, and apparently staying at 7 King Street, Southsea, and both Sir Edward Parry and Sir John Richardson were then at Haslar Hospital. Parry was fully acquainted with all the suggestions that had been made for the relief of the Franklin expedition; he was, indeed, the Admiralty's chief adviser on the subject, and he had in all probability met Griffiths when the *Erebus* and *Terror* were being equipped at Woolwich, if not before, for he had taken an active part in all the preparations.[5] Richardson in July 1847 was engaged in making his arrangements for his proposed journey down the Mackenzie River in search of Franklin, and Griffiths, as has already been mentioned, undoubtedly knew of them. In any case, Griffiths's well-known connexion with the absent expedition would have made everything that he knew of Franklin's arrangements of the greatest interest to Parry and Richardson, and would of itself have sufficed to bring the three officers together when they were living quite near to each other, and measures for Franklin's relief were either in actual progress or under earnest consideration.

About eighteen months later, in January 1850, the Admiralty was planning the despatch of a Franklin relief expedition consisting of two steamers and two sailing ships, and all these had to be purchased, since no suitable vessels could be made available from the Royal Navy. Griffiths, who was then staying at 2 Rutland Street, Hampstead Road, London, was requested, apparently by Captain W. A. B. Hamilton, to inspect some ships

1 Parliamentary Paper, pp. 26, 27.
2 *Ibid.* pp. 27, 28.
3 *Ibid.* pp. 30–2.
4 *Ibid.* p. 24.
5 The Reverend E. Parry, p. 278.

lying in the City Canal,[1] and to state if any of them appeared to be suitable. He reported that he had seen one new ship which, if doubled and strengthened, seemed well adapted for conversion into an Arctic expedition ship. She was a barque of 415 tons, and was for sale. He did not mention her name in his report.[2] Two barques were actually purchased by the Admiralty, renamed the *Resolute* and *Assistance*, and sent to the Arctic, but neither of them is likely to have been the barque inspected by Griffiths, for apparently neither was a new ship.[3]

Several communications written at the Whalefish Islands by members of the Franklin expedition had mentioned that the *Erebus* and *Terror* were very heavily laden after they had received all their stores from the *Barretto Junior*. Franklin himself stated in his official report to the Admiralty: 'The ships are now complete with supplies of every kind for three years; they are therefore very deep; but, happily, we have no reason to expect much sea as we proceed farther.'[4] He mentioned also in a letter to Parry that the *Erebus* would draw seventeen feet of water when the boats and anchors were up,[5] and in fact both discovery ships did draw that amount of water.[6] Furthermore, a letter written by one of Franklin's officers and published in a provincial newpaper, included the following statement: 'I certainly never saw any ship so deep before, and I felt anxious, like a boy with a walnut-shell in a basin of water, to see if the vessel could bear it.'[7] The certainty that both ships had been very deep, and the continued absence of any tidings of them, led some authorities in April 1850 to wonder if the ships had been laden beyond the limits of safety and had foundered soon after they had been seen by two whaling ships in the upper part of Baffin Bay at the end of July 1845. Griffiths was asked to state whether he thought that a catastrophe of this kind was likely to have occurred. His answer was an emphatic negative. The weather, he said, had been fine; when the *Erebus* and *Terror* were seen for the last time about a fortnight after they had left the Whalefish Islands, a considerable quantity of provisions and water would already have been consumed, and the ships would have been in comparatively smooth water.[8]

So far as can be ascertained from the Admiralty records in the Public Record Office this report was Griffiths's last official communication concerning the Franklin expedition. But his interest did not flag. Widespread

1 This now forms part of the South Dock, West India Docks.
2 Admiralty Records, Public Record Office, *loc. cit.*
3 Sir Clements R. Markham, *Life of Admiral Sir Leopold McClintock*, London, 1909, p. 68., n.
4 Parliamentary Paper, p. 50. 5 The Reverend E. Parry, p. 279.
6 Letter to John Barrow, quoted by Sir Albert H. Markham.
7 *The Ipswich Journal*, Ipswich, 16 August 1845. The name of the writer is not given.
8 Admiralty Records, Public Record Office.

public anxiety regarding the quality of the preserved meat furnished to the *Erebus* and *Terror* arose in January 1852, when the Press reported the result of an examination at Portsmouth of some preserved meat prepared for the Navy by the same contractor who had supplied the Franklin expedition with preserved meat and preserved vegetables.[1] The astonishing state of affairs revealed by this examination prompted Griffiths to write to *The Times*.[2] He stated in this letter that he himself, when at the Whalefish Islands, had eaten some of the preserved meat and preserved vegetables issued to the Franklin expedition, and had found them all very good, the only fault in his opinion being lack of flavour in the preserved potatoes. He stated also that when he dined on board the *Erebus* on the day of his departure from the Whalefish Islands, he had asked the purser of that ship for his opinion of the provisions supplied to the expedition, and the purser had answered that they were very good indeed, and that he wished Griffiths, after his return home, to mention the matter to the Controller of Victualling.

Since Griffiths was widely known as the last officer in the Royal Navy to have been together with the missing officers and men, he is very likely to have been approached by many of their distressed relatives and friends. These would naturally have been anxious to obtain at first hand as much information as possible, not only when the rescue of the absent expedition still appeared to be probable, but also later, when all hope had perforce been abandoned.

Griffiths's services after his return from the Whalefish Islands in 1845 may be briefly summarized as follows. He remained in the employment of the Transport Service for about two years, and in the spring of 1847 was placed on Reserve half-pay. He was, however, soon afterwards given the command of the *Morayshire*, which conveyed a number of liberated Africans from Sierra Leone to Jamaica. In 1848 he took more Africans in the *Clarendon* to Montego Bay, Jamaica, and for his services received the approbation of the Emigration Commissioners. Two years later he was appointed Superintendent of liberated Africans at St Helena, and the manner in which he discharged his duties earned the entire approval of the Colonial Secretary. He returned to England in 1851, and apparently remained on Reserve half-pay until September 1854, when he rejoined the Transport Service for a few weeks and gained the Crimean medal for his services in the Black Sea. He retired with the rank of Commander on 11 November 1854, and received a naval pension in March 1867. He lived to a great age, and was ninety-one years old when he died at 99 Sultan Road, Landport, on 30 December 1883.[3]

1 R. J. Cyriax, pp. 109 *et seq.*

2 *The Times*, 12 January 1852.

3 See p. 178, footnote 2.

THE NEW BROAD ARROW: ORIGINS OF BRITISH OIL POLICY

By Joseph E. King

THE toppling of masts and splintering of bulkheads and crashing of explosive shells at Sinope and Hampton Roads sounded the death knell of the old line-of-battle ship and heralded the great revolution in naval architecture. Thereafter, within the limits of a given tonnage, the ship designer mixed horse-power, fire power, and armour plate to produce his floating war machine; an increase of one ingredient in this deadly concoction, therefore, meant that the amount of one or both of the others had to be decreased proportionately. The elusive goal was the perfect battleship; this was the driving force behind the architectural upheaval which finally came to an end about 1880 when all the basic features of the modern man-of-war had been evolved. With the development of this prototype, refinements were sought with renewed vigour, and among these was the quest for more efficient types of marine fuel; it is this aspect of the naval situation, as it concerned Great Britain, which will be scrutinized here.

When iron and coal replaced wood and sail as the sinews of naval warfare, the tremendous benefits enjoyed by the British Navy were enormously multiplied. A few calamity-howlers were certain that steam would make a French invasion inevitable, and others complained that the reserve of topmast hands would be rendered obsolete; compared to these nightmares the advantages were breath-taking. The Admiralty was freed of the precarious task of obtaining masts and timber, for there was no lack of iron ore within England and there were numerous skilled craftsmen to work it; the finest steam coal in the world was available in the mines of South Wales, and the Empire provided a myriad of ports which were easily made into coaling stations. In such a favourable climate the Royal Navy became ever more powerful. Not until the eve of the twentieth century did the menace of a rival loom on the horizon. In these circumstances the Admiralty Board was not inclined to alter the ancient policy of watching and waiting: the English watched while others experimented, they waited until the thing in question proved practical, and then, with a minimum of effort and expense, they adopted the device for their national ships. But this serene situation could not last in an Age of Navalism; factors were afoot to demolish it completely. The passage of the First German Naval Law in 1898 was a storm signal for the British Fleet. Englishmen, in a way hardly under-

standable to others, had come to look on the high seas as their own preserve, and they resented bitterly any intrusion as a crime somewhat akin to poaching. A large fleet was held to be an unnecessary luxury for the Germans and was denounced as *prima facie* evidence of aggressive designs on the British Empire. When Admiral Sir John Fisher was First Sea Lord, he grandly offered to steam into the German bases and 'copenhagen' this vile threat, *à la Nelson*; probably the old admiral had his tongue in his cheek when he outlined the scheme, but it was not unrepresentative of the attitude that had seized the realm a half century ago. An allusion to the development of a powerful German Fleet is pertinent here only in so far as it explains the abandonment by the Royal Navy, in 1904, of the traditional policy of watching and waiting. Fisher inaugurated the new era with the construction of a radically improved type of battleship, the all big-gun *Dreadnought*. Built in a year and a day, it was the most spectacular, but by no means the only, evidence of an aggressive future in British naval thought.

* * *

The ideal semi-bituminous coal from her own mines, the so-called Welsh Cardiff, gave England an immeasurable advantage, for it was burned not only in the furnaces of her fleet but was exported for use by numerous other navies, creating for the British an economic asset as well as a strategic bludgeon over any who might presume to challenge her. Welsh Cardiff was valued because of its superior calorific content and because it produced a minimum of ash and smoke. Yet because it was a solid fuel, this coal possessed certain inherent disadvantages. Every few weeks it was necessary to go through the arduous and hazardous process of recoaling; more serious was the fact that as more coal was consumed, it became necessary to send more and more men from their deck stations to haul the fuel to the furnace maws. The effectiveness of a squadron on patrol was dangerously impaired, for as many as 40 per cent of its units were absent coaling. Coal could not be stockpiled in large quantities because it deteriorated rapidly on being taken from the mines; this was especially troublesome for Great Britain, because her life-line to the East passed through the Tropics, where the disintegration of the fuel was accelerated. Finally there were such technical disadvantages as strain on machinery at high speeds and the likelihood of foul fires.

For decades prior to 1900 marine engineers were aware that the solution to these problems could be found in petroleum. Oil-fired ships could be refuelled, at sea, if necessary, without inconvenience to the crew. Oil did not deteriorate, and unlimited amounts could be stored to meet any emergency. It could be bunkered in the double bottom as well as in other parts

of the vessel inaccessible for coal, and the furnace crew was reduced and remained a constant figure. Its higher thermal value enabled a ship to attain about three more knots using the same type of boilers and machinery. These factors meant that the range of a fleet was materially increased and its effectiveness was nearly doubled and was more nearly calculable by staff planners.[1]

Since the early 1860's the Russians in the Black Sea area has used oil for marine purposes, but only as a substitute for coal which was not available in that region; however, apart from a shortlived test by the French Navy, the first scientific work in this field was accomplished after 1880 by Vittorio Cuniberti of the Italian Navy. By 1890 he had developed a process which burned oil and coal in combination. It effected a better combustion of the solid fuel and squeezed a few more knots out of the same equipment. It was installed in the Italian ships, and soon the other Continental powers adopted it for their vessels. Only the British neglected it, complaining bitterly that other navies were too secretive about their oil devices: and, anyway, it made so much noise in the furnaces that the stokers would all go mad! But then, the British Navy was the only one which possessed an unlimited supply of the incomparable Welsh Cardiff.

Meanwhile, Cuniberti had been hard at work, and by 1900 had created a mechanism capable of burning oil alone.[2] The Italians, who had no strategic or economic reason to prefer coal, refused to do more than put these oil burners in their torpedo-boats, and other nations dared go no further. Finally, in keeping with their traditional policy, and despite the un-cooperative policy of their rivals, British Admiralty officials began to evince an active interest in oil fuel. In all fairness, it must be asserted that they were not mere reactionaries; the proponents of coal advanced cogent arguments, the most striking of which, in view of recent events in Iran, still has an apparent validity. This argument held that the Navy was the shield of the realm, and that to abandon coal, whatever its inconveniences, was to jettison what had contributed to England's greatness, for there was no oil within the island and little within the Empire. A tactical reason was also advanced. Coal bunkers were so arranged within a vessel that the solid fuel acted as a buttress to the protective belt, and were a shell to penetrate the

1 I have enumerated the most striking and fundamental advantages of oil over coal; there are numerous others of a technical nature which are clearly set forth in *Marine Boilers* (2nd ed., New York: the Babcock and Wilcox Company, 1922), p. 64; William Hovgaard, *History of Warships* (London, 1920), pp. 265–6.

2 The problem he faced was how to atomize the oil, and thereby create a spray fine enough to be completely consumed by fire. At first this was done by steam, a method which used up water too rapidly; finally a pressure device was perfected; see Hovgaard, *History of Warships*, p. 373; *Marine Boilers*, pp. 63, 67.

armour, it would be stifled in the heavy coal. This claim was completely sunk, along with S.M.S. *Blücher*, at the Dogger Bank early in 1915.

The performance of oil-fired vessels of the merchant marine and of foreign navies brought about the establishment of a cautious Oil Policy Board in the Royal Navy in 1903. Trials were conducted using coal-oil in two battleships, and a training school was set up to instruct officers and ratings in coal-oil technique. In 1904 H.M.S. *Spiteful* was converted to burn oil alone.[1] But the great emphasis remained on coal and on experimentation in seagoing coaling devices. The concrete result of this expensive research was Coaling Depot *No. 1*, based at Portsmouth. It cannot be denied that the contraption floated in the harbour, but quite obviously, were any breezes to blow, *No. 1* would have gone below, just like Sir Joseph Porter, K.C.B., the lubberly First Lord in 'H.M.S. *Pinafore*'!

In October 1904 Admiral Fisher began his tour as First Sea Lord; this officer was distinguished for his energy and initiative and had declaimed the advantages of oil so vehemently that he won for himself the soubriquet 'Oil Maniac'. The Royal Navy began to take the lead in technical developments; in 1905 and 1906 its main effort was centred on the construction of the *Dreadnought*. The speed with which she was constructed and the great publicity that Fisher blared out about it, plus the fact that it had checked the aspirations of Britain's rivals, served to obscure the progress that was being made with petroleum. In 1905 H.M.S. *Swift*, the first Royal Navy ship designed specially for oil consumption, was laid down; she was the prototype from which the fast Tribal Class of destroyers was derived. Ships of this class displaced over 1000 tons and were rated at 35 knots. In 1908 the Asquith Ministry decided that speed must be sacrificed to economy, and a cheaper, slower class of coal burners took the place of the Tribals, a thing which Winston Churchill, then a strong supporter of this policy, later denounced, with the most astute hindsight, as comparable to breeding 'slow race-horses'. Not until 1911 was there any change, and ironically enough, the change stemmed from the appointment of the same Winston Churchill as First Lord of the Admiralty.

* * *

1 The *Spiteful* was 9 years old at this time. Hovgaard, *History of Warships*, p. 265, says H.M.S. *Gadfly*, 225 tons, was the first torpedo-boat destroyer to depend on oil alone in the Royal Navy; such a vessel does not appear in the official or the quasi-official sources. [The vessels of this class were originally to be named after various kinds of 'Fly', but before being commissioned they were changed to 'Coastal Torpedo-Boats' and given *numbers* from No. 1 to No. 36 instead, probably because it was impracticable to find thirty-six appropriate sorts of flies! In the Service they were familiarly spoken of as the 'Oily-Wads'. I had the honour of commanding *Torpedo-Boat No. 1* (probably the *Gadfly*) in the War of 1914–18. H. P. Mead (Ed., *M.M.*).]

In 1899 the Shah of Persia bestowed on General Katabjin Kahn, the commander of his Household Troops, a fabulous token of his royal gratitude, the right to exploit all the mineral resources of Persia. At this point there appeared on the scene the traditional combination of British enterprise and initiative in the person of William Knox D'Arcy, an Englishman who had amassed a fortune in the goldfields of Australia. Data in a French mining journal convinced him that an investment in Persia offered promise and he contrived to meet General Katabjin, who was land rich and cash poor; a deal was negotiated and the impecunious soldier transferred his rights to the ubiquitous prospector. Regardless of the price involved, D'Arcy had obtained a bargain, and in 1901 it was ratified and reduced to explicit terms. He received the 'exclusive privilege' of exploiting petroleum, natural gas, asphalt and ozokerite, and of disposing whatever he found as and where he wished. He could acquire the land necessary to facilitate the extraction, refining, and transportation of these products, in most cases without cost and with immunity from taxation. Certain articles required or produced by the grantee were exempted from custom's duties. The general's concession had applied to all of Persia; but because D'Arcy was an Englishman, the northern part of the country, which lay in Russia's sphere of interest, was not included. In return for these concessions, D'Arcy agreed to pay the Persian Crown an annual stipend, about £550 sterling, and 16 per cent of the net profits. It was to last until 1961, it was later extended, and upon its expiration, all the property of the grantee would devolve freely to Persia.

D'Arcy established the First Exploitation Company and succeeded immediately in bringing in oil; commercially, however, his wells were poorly located, standing near the Turkish border, 300 miles from the nearest seaport, hemmed about by mountains. The construction of a railway or a pipe-line or even a road to tide-water was an expensive undertaking, and D'Arcy, who had invested £300,000 already, felt unwilling to hazard more capital; like General Katabjin, he looked about for a buyer. He was on the verge of selling his rights to a foreigner when the British Admiralty interjected itself into the middle of the picture. D'Arcy was urged to wait, and the heads of the Navy held a 'council-of-war' and decided that the Burmah Oil Company, an organization completely owned by British subjects, was the one to take over the D'Arcy concession. Admiral Fisher laid a course to the office of Lord Strathcona, the hoary chairman of Burmah. It will probably never be known whether the First Sea Lord dilated tantalizingly on the fiscal aspects of the transition or whether he signalled: 'England expects Burmah will do its duty!' Whatever he said, the financier capitulated and purchased the Persian concession '... purely from the national point of view of "oil for the Navy"...'.

Burmah had been in the oil-drilling business for a quarter of a century and it possessed the skill and acumen that D'Arcy lacked. Burmah experts selected the Maidan-i-Naphtun area, 150 miles north of the Persian Gulf, for their drilling operations, and from it a pipe-line was built to the sea. A potential source of trouble existed in the conduct of the Bakhtiari tribesmen, the wild overlords of this region, but again Burmah was equal to the task. The Bakhtiari Company, a second exploiting group, was organized, and 3 per cent of its stock, valued at £12,000 sterling, was given outright to the tribes. Thus they held a vested interest in the project, a strong inducement to observe a peaceful attitude toward the oil workers; they were, moreover, provided with employment, medical care, and other benefits, all of which would vanish if the company were harried out of the oil fields. These things combined to create tranquillity among a 'hitherto disturbed population', and isolated acts of vandalism were brought to an abrupt halt by the appearance of four or five Sikhs.

Across the Shatt-el-Arab from the pipe-line terminal lay Abadan Island, upon which storage, refinery, and dock facilities were constructed. The refinery had a capacity of 20,000 tons of oil a month, and as the yield at Maidan-i-Naphtun outran this figure, it became necessary to throttle down most of the wells there. Simultaneously, the financial structure of the venture was being overhauled. In April 1909 the First Exploitation Company and the Bakhtiari Company were merged to form the Anglo-Persian Oil Company, Limited. The directorate of this organization was headed by Baron Strathcona and was composed of British subjects. With the exception of the Persian holdings, about 9 per cent, the stock-list was likewise British.[1] Thus, with the unofficial backing of the Admiralty, a substantial supply of oil was made available for the fleet, independent of the great European petroleum trusts. This new source of oil was not intended to fill all the needs of the Royal Navy, but it was felt that the mere fact of its existence would weaken the monopolists' stranglehold on the

1 *Parliamentary Papers*, 1914 (Cd. 7419), LIV, p. 24, 'All the shares in these two companies not held in Persia are the property of the Anglo-Persian Oil Company, the respective holdings being as follows:

First Exploitation Company:			
Anglo-Persian Company	478,460	—	87·95 per cent
Persian Shareholders	65,540	—	12·05 per cent
Bakhtiari Company:			
Anglo-Persian Company	388,000	—	97·00 per cent
Persian Shareholders	12,000	—	3·00 per cent'

The Anglo-Persian Oil Company was capitalized at £2,000,000; see *The Times* (London), 17 April 1909.

market and keep prices more nearly normal. To grasp all the aspects of the oil policy, it must be recalled that Persia was not the only area in which the British Government supported the oil prospecting of its nationals. The indefatigable D'Arcy appeared on the scene again, this time in Turkey in 1906, and commenced an eight year struggle for concessions in the great Mesopotamian oil fields, with the backing of the Foreign Office.[1]

It appears from these events that any decision to transfer the main units of the fleet from coal to oil was made with the secure knowledge that British interests were in command of an oil source in Persia and that they were on the point of obtaining one in Mesopotamia. Foreign supplies were subject, of course, to many vicissitudes that Welsh coal was not; and, with the increasing importance of petroleum as naval fuel, the Admiralty seemed determined to profit from the bitter lessons taught by the timber problem.

* * *

Winston Churchill's appointment as First Lord of the Admiralty in October 1911 was hailed by the economy-minded, but scarcely was he advised of his new duties than he contacted Admiral Fisher, now retired, but still effervescent with expensive advice about the Navy. Where temptation is purposely courted, there is one result: Churchill succumbed and immediately ordered work to be started on a 'super *Swift* class', faster and costlier than the 'slow race-horses'. Then the two decided that the 15 in. gun, larger than any then afloat, must be adopted by the fleet; when the First Lord hesitated to order forty of these weapons without preliminary trials, Fisher persuaded him to gamble that they would be mechanically perfect. Larger guns required larger ships, and the admiral insisted that these vessels be capable of 25 knots, a speed attainable only by burning oil in their furnaces. Thus, in April 1912, the decision was made to include the Fast Division of five oil-fired super-Dreadnoughts in the Estimates.[2] Unlike other advances by the Royal Navy prior to 1905, this was not made in the wake of another fleet; it was brazenly taken; it was the translation into action of Fisher's dictum, 'there is only *one* defence and that is *speed*'.

The adoption of oil raised numerous technical and procurement problems, and Churchill decided that his adviser would be the best one to solve them. At the urging of the Prime Minister and the First Lord, in May 1912, Fisher accepted the presidency of the Royal Commission on Fuel Oil, an

1 E. M. Earle, 'The Turkish Petroleum Company—A Study in Oleaginous Diplomacy', *Political Science Quarterly*, xxxix (1924), pp. 265–79.

2 These were ships of the *Queen Elizabeth* class, and consisted of four vessels paid for by appropriation: H.M.S. *Queen Elizabeth*, *Barham*, *Valiant*, and *Warspite*; the other was a gift of the Federated Malayan States: H.M.S. *Malaya*. Each displaced 27,500 tons, was capable of 25 knots, carried a 13-in. belt, and 15-in. guns; see *Jane's Fighting Ships* 1917, p. 59.

advisory body, whose proceedings were, and still are, completely secret, a measure calculated to win the confidence of the important witnesses who testified.[1] It was assigned the comprehensive task of solving oil problems in all their naval aspects: it was to uncover sources of natural and synthetic petroleum, to show how the Navy could purchase it cheaply in peace and in war, and to find the most efficient means of storage; beyond this it was to delve into improvements in machinery, and explore the possibility of utilizing them on national vessels. An emasculated report laid before Parliament, and some of Fisher's published writings, give a clue to the recommendations of the commission, which had completed most of its work by early 1913, when the oil question was introduced to Parliament.

Its findings were built on the basic premise that fuel oil was an absolute necessity for the Navy in maintaining its supremacy, and while there was practically no oil in Britain, the world supply was more than ample, and sensible measures could secure this oil at its source. Since oil did not deteriorate in storage there would be no difficulty in building up a large emergency reserve. The numerous tankers on the high seas could be considered 'peripatetic re-fueling stations' for the Royal Navy, irrespective of the colours they flew. Other details may best be surmised from a brief study of the debates on the Estimates in 1913.

These debates have a further value, for they illuminate some aspects of the decision itself. When some M.P.'s objected because Parliament had not been informed of the change and permitted to have the last word, the Ministry replied that technical matters, such as this, were usually left in the hands of the department concerned and its staff of professional experts. Admiral Beresford shouted that the mere fact that oil was unavailable in Britain made him question the wisdom of Churchill's decision. Churchill's reply deserves careful scrutiny. Oil would be available, he said, as long as England controlled the seas, a control depending on coal-burning cruisers; were it lost, the lack of oil could mean little to an island that could not import enough food to exist. Granted, as the First Lord argued, that oil was carried in special vessels, unfit for dry cargo, and that the double bottoms of all vessels could be used as auxiliary means of carriage, the fact remained that oil-tankers required seamen from the reserve of merchant sailors, they taxed the same building and repair facilities as other mercantile units. Oil, moreover, was necessary to move the army and it was the only commodity

1 To the best of my knowledge, based on discussions with interested scholars, pertinent records of this particular period stored in the Public Record Office, have not yet been made available for research. See also R. H. Bacon, *The Life of Lord Fisher of Kilverstone* (2 vols., London, 1929), II, p. 156. The Blue Book referred to by me as an 'emasculated report', is the *Parliamentary Paper* cited on p. 192, n. *supra*.

that could accomplish this. In a desperate struggle these factors could tip the balance and cause disaster, as they very nearly did in 1917.

The Parliamentary representatives of the great mining interests were strangely silent about the change; the reason, however, was not far to seek. For a generation the Navy had resisted every pressure to burn inferior North-Country coal and had purchased only Welsh Cardiff. Naval consumption hit its peak in 1910, but even this constituted only 10 per cent of the output of the mines in South Wales; since the transfer to oil was to be effected over a period of years, the normal expansion of the civilian market was expected to offset this loss. Only indirectly was a reference made to this aspect of the issue; one speaker fully conceded the superiority of petroleum but demanded that every phase of the problem be examined exhaustively. He restated the argument about rendering obsolete a powerful economic and strategic asset, but, being a gentleman of late Victorian England, he foresaw no insurmountable diplomatic problems in the offing.

The climax was reached on 17 July 1913, when Churchill announced the 'ultimate' naval oil policy, based on the recommendation of the Fisher Commission. It did nothing less than put the Admiralty into the petroleum business. Vast storage facilities were to be constructed; refineries, capable of processing crude oil for the fleet, were to be erected. These would assure a supply of fuel in the event of an emergency, and they would make possible the purchase of crude oil whenever the market was favourable. National dockyards and cordite factories were cited as ample precedent. Finally, the policy called for the acquisition of oil fields capable of supplying at least a portion of the demands of the Navy, and until then no more capital ships would be built for oil combustion! Churchill reluctantly confessed that the soaring costs of oil was a source of anxiety to the Admiralty. But it was a question of price, not of supply, which caused this delay in laying down another class of oil burners; anyway, he went on, if all British battleships were capable of the speed of the Fast Division, the latter would no longer be fast, but ordinary! Later he was forthright enough to admit that the return to coal was a wretched mistake that had been quickly rectified. The House, overlooking the remarks about transforming the Fast Division into an ordinary one, voted its approval of the Estimates and the policy without division.

* * *

Late in 1913 the Admiralty sent a commission of experts, headed by Rear-Admiral Sir Edward Slade, to investigate the property of the Anglo-Persian Oil Company, and to evaluate it with regard to the new naval policy. They arrived in Persia in October and examined the ground and equipment carefully, and in April 1914 submitted their report, emphasizing that the

production at Maidan-i-Naphtun fully warranted acquisition by the Navy. In May the Admiralty's ancient Broad Arrow was fletched anew for use on forests of oil derricks; an agreement was signed whereby, for £2,200,000, the Admiralty received a majority of Anglo-Persian stock and a place on the board of directors, with the right to negative any motion having to do with naval or diplomatic affairs. The rich concession and the experience of this well-established organization were brought under the direct control of the Royal Navy.

On 17 June 1914 Churchill introduced the money bill in the House of Commons.[1] He reminded Members that coal would be the mainstay of the fleet for some years to come, and even the petroleum required would not be drawn exclusively from Persia, but would be purchased from numerous sources. The purpose of Anglo-Persian was to furnish a large enough part of it to exercise a regulatory influence on the price in general. This, he stressed, was a factor of paramount importance, for there was plenty of petroleum available in the world, for a price, and now such price could be manipulated in favour of the British Navy. He said that a contract had been effected, related to the acquisition agreement, yet distinct from it, by which a specified amount of oil was to be delivered to the Navy at the Abadan docks. Consistent with commercial usage, he refused to disclose the terms of this contract, except to assert that they were extremely favourable, nor would he concede that there was any cause for worry over the necessity of transporting the oil to England. Were the Suez Canal blockaded, the Cape passage would be available, dominated by British cruisers and bases, and while this trip took about a fortnight longer each way, it was no more expensive, because there were no tolls to pay. Again one must note a glaring fallacy in the Government's argument. It was true that the canal tolls were about equal to the extra costs of the longer haul, but a large percentage of them were returned to the Exchequer as dividends on government-owned canal stock, so this point lost much of its force. Moreover, every vessel would be tied up for at least a month longer, and this month, multiplied by the number of tankers and crews and escorts involved, could total the difference between victory and defeat, should a struggle become close. An examination of this over-simplification, however, serves to explain, and, in a way, excuse what can now be seen as faulty reasoning. The foundation of the argument rested on the assumption that, like the daily rising of the sun, British control of the sea could be taken for granted. This needs no further explanation.

The second factor is not so evident. The price situation was uppermost in

1 *Parliamentary Debates House of Commons*, 5th ser., vol. 63, cols. 1131–51 (Proceedings, 17 June 1914).

the minds of the Ministry. The Navy was particularly vulnerable, for warships constructed for exclusive oil consumption could not be converted to coal. A supply of liquid fuel was therefore imperative, and the trusts were not unaware of this. Churchill recalled that in 1911, coal and oil, for the horse-power delivered, cost the same, and on this basis the Admiralty decided to change to petroleum. But a price squeeze threatened to raise the operating costs of oil burners to prohibitive heights, and even to immobilize them. Since 1906, he continued, the Navy had taken an active interest in the Persian oilfields, when Admiral Fisher's intervention had forestalled the seizure of the area by any 'foreign or cosmopolitan company'. There seemed no reason why this work should not be pushed forward, especially in view of the encouraging details of the Slade Report.

Churchill's arguments now wore and started off on another quarter: in minimizing the menace of an invasion against Persia, he emphasized that only a fraction of the fleet depended on oil, and that only a part of the oil would come from Persia. This was rather a broad use of the word 'fraction', since there were 314 vessels in commission and under construction equipped to burn oil exclusively or with coal, and this included 68 capital ships. Should they be unable to get oil, over 200 destroyers and submarines, sixteen light cruisers, and the mighty Fast Division would be completely helpless, while another hundred units, including 63 battleships and battle-cruisers, would move at speeds appreciably slower than those on which battle plans had been formulated. The First Lord hastened on to another aspect of the problem, observing that native uprisings need cause no concern, since the company and the material benefits it lavished had a quieting effect on the unruly tribesmen. In conclusion he gave warning that were the Admiralty forbidden to complete the transaction, the Anglo-Persian Oil Company would be snapped up by the Royal Dutch-Shell, an organization ever ready 'to promote the interests of the British Empire, at a price.... On that point, of course, we have been treated with the full rigour of the game.'

Again the constitutional argument was raised and some M.P.'s taunted that the failure to inform the House of the proposed purchase at each step in its progress could only mean that the Admiralty had been duped by the gimlet-eyed business-men; Churchill tartly retorted that secrecy was the essence of the matter, but if Parliament wanted each and every detail, it could have them, for Parliament was omnicompetent. Then Samuel Samuel, the brother of the president of Shell, let fly a double-shotted blast at the First Lord for his strictures on the petroleum trusts: 'I say, and say it without fear of contradiction, that when the facts are known it will be found there is no such thing as a monopoly in the oil trade in any part of the world!'[1]

1 63 *H.C. Deb.* 5th ser., cols. 1220–1 (Proceedings, 17 June 1914).

By this time the 'Victorian Heritage', as the lucrative foreign investments of England were called, was a bulwark of the prosperity of Englishmen, and it is odd to hear the legatees of this wealth argue that money intended for Persia might be spent with more wisdom at home. There were suggestions that serious political complications would occur in England when it was learned that the Government had speculated in unsettled, semi-civilized Persia. The Foreign Secretary asserted that there was no menace in Persia that could not be resolved by a few English troops, and he added that the Anglo-Russian Entente of 1907 acknowledged Southern Persia as a British sphere of influence. These objections did not hold up the passage of the bill by Parliament, and on 10 August 1914 it received the Royal Assent. By it, the chief objectives of the Admiralty's 'ultimate' programme were realized, almost simultaneously with the outbreak of the War of 1914–18.

* * *

After its false start in 1903 the British Government finally, three years later, embarked on a rational oil policy. Two highly significant events took place during 1906: first, the Admiralty persuaded the Burmah Oil Company to buy out the D'Arcy rights in Persia, and the Foreign Office, through its ambassador at the Porte, began active support of British claims for a petroleum concession in Mesopotamia. Although concerned with different areas, these moves by two branches of the Government appear as nothing less than a concerted effort, and reflect a definite policy regarding petroleum. Thereafter there are evidences of the continuity of this policy, although, subsequent to Fisher's tour as First Sea Lord, and prior to Churchill's appointment as First Lord, the purely naval aspects of the policy lost much of their vigour in the face of a niggardly apathy. But never was there any pause in the efforts to obtain control of foreign oil fields.

Late in 1911 Churchill came to Whitehall as the civilian head of the Navy; his mission was to execute the economy measures his predecessor had neglected, but a long consultation with Fisher convinced him that liquid fuel, irrespective of cost, was necessary for speed, and speed was necessary for continued supremacy at sea. When he hesitated about converting the line-of-battle to oil, Fisher's words bolstered him, and the concrete result was the great Fast Division. Then, to solve the problems connected with the procurement of this new fuel, Churchill again called on Fisher, who, as the chairman of the Royal Commission on Oil Fuel, laid down the very basis for the 'ultimate' oil policy. From first to last the hand of the old 'Oil Maniac' is to be seen in the broad plans and in many of the finer details, and it is not far amiss to say that were it not for him, the British naval oil programme would have been in its early infancy when the guns started

roaring in 1914. Of course nothing in this conclusion can impugn the great credit due to Winston Churchill, who was the responsible minister and upon whose shoulders fell the task of convincing his fellow cabinet members that the course he was charting was correct, politically, economically, strategically and tactically.

In addition to the influence of Admiral Fisher, there were two other pressures which certainly hastened Churchill along the series of decisions that culminated in 1914. The first of these in the matter of time, although probably not in importance, was the surge of unrest that swept through the ranks of the Welsh miners. The First Lord could recall the frightful labour riots that tore across the Baku oil fields, along the Caspian, in 1905. Oil production came to a stop; where it was absolutely necessary, ships built to burn oil were refitted to burn coal, imported at tremendous cost by the Russian government. In 1911 a wave of strikes in South Wales caused considerable worry in the Ministry and in the Commons, and one M.P. even suggested that the mines be nationalized to bring the workers to heel. Probably there were many who could see the units of the Royal Navy suffering the ignominious fate of the Caspian steamers. At any rate, measures were taken in December 1911 to assure a steady supply of coal for the fleet, but there still remained a question as to the effectiveness of such measures in the face of latent dissatisfaction, and in view of the characteristic of coal which caused its rapid deterioration when stockpiled. It is true that none of the principals involved made any direct public reference to the labour unrest in this connexion, but it is also true that a few months after the question had been raised in Parliament, oil became the fuel for all future battleships and battle-cruisers. Whether one chooses to believe that this was a contributing cause or not, the change to oil did free the Navy in ever increasing measure from dependence on one mining area, and made possible purchases of a standard fuel from many different sources. In this respect it proved a far-sighted move, for in mid-1915 a serious coal strike forced Admiral Jellicoe to husband his coal stores and to rely on his oil-fired ships.

The last factor is the question of price. Just as it appears that the unrest of labour had a catalytic effect on the adoption of oil for the battle fleet, so it seems that the price situation speeded up the acquisition of oil fields and facilities by the Admiralty. In 1911 oil and coal cost the Navy approximately the same, but as the use of oil became more necessary for the fleet, the Admiralty was subjected to a squeeze, and the price shot up. The staff at Whitehall was thoroughly dismayed and the First Lord allowed himself to waver and to be persuaded to go back to coal burners for the 1913–14 class of capital vessels. To free the Navy from the control of the money-

minded trusts, the purchase of the Anglo-Persian Oil Company presented a solution not without analogous precedents; it was the one followed and the Government embarked on a policy of direct participation in the petroleum industry. Although some have argued that direct Admiralty control over the Persian wells was unnecessary and pointless because of British sea-power, and because the bulk of naval fuel would come from other sources anyway, the fact remains that the matter of cost *was* involved, and that by possessing these oil fields the Navy would have a means to control cost.

During the critical days of the War of 1914–18, Britain obtained petroleum from the Standard Oil Company at much less than she had been paying, but this must not be allowed to touch on the situation before 1914. Lately, events have occurred which predicate the loss of the Persian concession, nor can control of the seas save for the Admiralty the enormous output of those wells. Here again, it was well after 1914 that there arose what seemed '...to be evidences of faulty policy in regard to the international...oil situation which closely resemble policies that produced serious results in the supply of masts and oak'.[1]

In the circumstances, threatened by the oil trusts in one quarter, by the solidifying ranks of labour in another, and by the technical experts of the German Navy in a third, the Admiralty oil policy of 1914 was a wise and considered one. The failure of that policy during the two Great Wars, and the wretched straits to which the oil Company is now reduced, can be ascribed to the development of submarine warfare, the expansion of a new brand of Russian imperialism, and the emergence of a fiery nationalism in the Middle East. Certainly the Company is to blame in part for the ill-will it has engendered, but, on the whole, these factors have been beyond the control of the British Navy. When assessing this policy, then, it should be borne in mind that in the light of information available in 1914 it was sound and judicious, in so far as it was based on lessons learned from the past. Its failure has been due to causes that could not be deduced by anything but guesswork. In its simplest form, there were presented two alternatives: to transfer the fleet to foreign oil, or to continue using native coal; and viewing the final choice from this limited view, with an eye on present-day English coal production, it must be granted that Churchill, Fisher, and their associates were far from being totally wrong.

1 R. G. Albion, *Forests and Sea Power* (Cambridge, Massachusetts, 1925), p. xi.

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THE NAVY AT COPENHAGEN IN 1807

By Anthony N. Ryan

THE purpose of this article is to examine the part played by the British fleet under Lord Gambier in the combined land and sea attack against Copenhagen in 1807, when the Danish navy was seized and carried off to a British port.

Copenhagen had been previously attacked by the British in 1801 when Nelson's squadron, without any assistance from the army, had compelled the defenders to submit. Since that date the Danes had made a point of keeping the defences of the place in good order to ensure that their capital should be impregnable to any attack by naval forces.[1] Copenhagen stands on the eastern coast of the island of Zealand. Directly opposite is the island of Amager, from which the city is separated by a narrow channel, which flows from the north-east to the south-west. The harbour and dockyards are situated within this channel. The northern entrance to the harbour from the sea was well protected. On the Zealand side was the Citadel, a strong fortress carrying a battery of mortars and 36-prs to cover the immediate approaches. Across the water on the northern tip of Amager was another battery, the Sextus, which mounted ten 150-pr mortars and forty-two 36-pr cannons.[2] These two batteries working in conjunction could lay a curtain of fire across the front of the harbour. Some 1400 yards north-east of the Citadel, on the end of a shoal which projected from the harbour entrance, stood the Three Crowns Battery, armed with sixty-eight cannon, including 36-prs and 24-prs, and three 150-pr mortars.[3] This battery formed an advanced work to the whole system of the sea defences; in co-operation with the guns of the Citadel, it covered the approaches completely. Its fire could not be silenced by ships' guns, storming was out of the question, and contemporary opinion regarded it as virtually impregnable.[4] Copenhagen harbour was well defended against a frontal assault by a naval squadron.

1 A native of Denmark, *A Tour in Zealand 1802* (London, 1804), pp. 62 *et seq.*

2 J. T. von Raeder, *Danmarks Krige og Politiske Historie fra 1807 til Freden til Jonkoping 1810* (Copenhagen, 1845), I, p. 81; Duke of Wellington, *Supplementary Despatches*, edited by his son the Duke of Wellington, K.G. (1860), VI, pp. 30 *et seq.*

3 Raeder, *op. cit.*, I, p. 181.

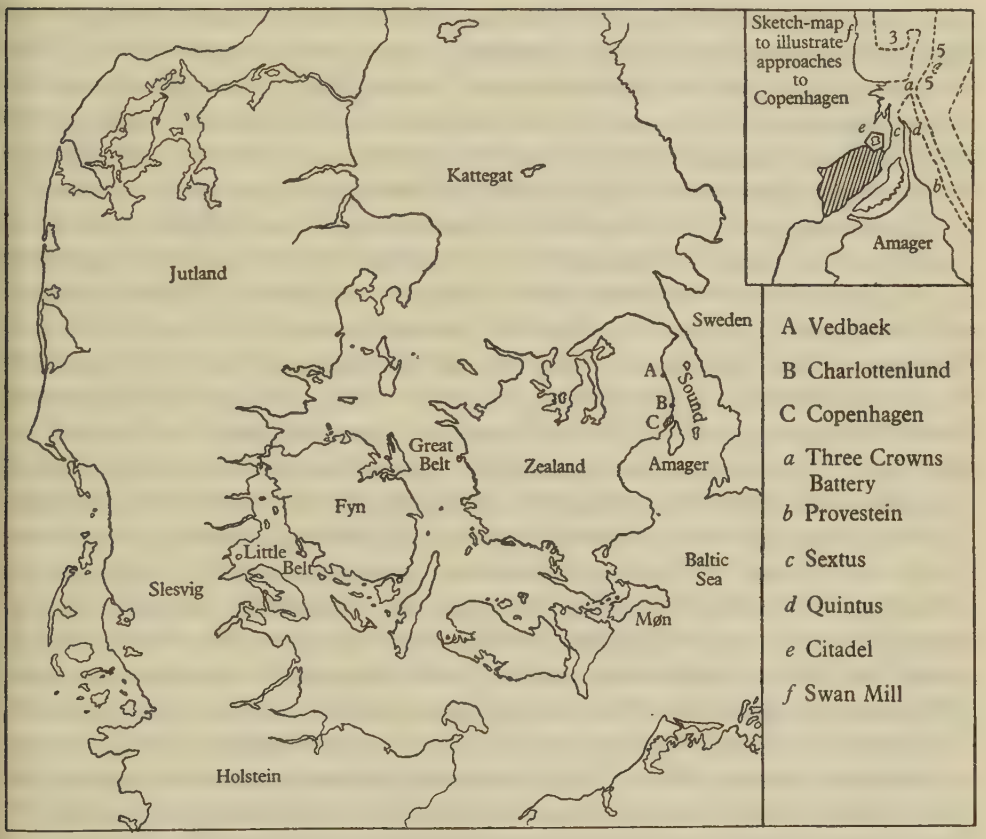
4 Anonymous. An Officer employed in the Expedition, *Narrative of the Expedition to the Baltic* (1808), p. 128.

The Danes had learnt other lessons from the battle of Copenhagen in 1801. On that occasion Nelson had outflanked these defences by entering the King's Channel, which lies between the north-eastern coast of Amager and the shoal known as the Middle Ground, from the south. He then attacked the floating batteries moored there. Their purpose had been to prevent a bombardment of the dockyards from the side of Amager. In the event, after a hard fought and bloody action, their resistance had been broken down. To prevent any repetition of this assault, a new battery, the Provestein, had been erected. It was situated 1000 yds from the coast of Amager to the south-east of the Three Crowns. It too stood on a sandbank and had been constructed in 1801 when three old warships were cut down, filled with ballast and grounded into the ruins of a fortification which had once occupied the same spot, but had been allowed to go to ruin. In 1807 the Provestein mounted eighty-nine 24-prs.[1] In addition, a blockship at the northern end of the King's Channel, and a chain of batteries on the coast of Amager supported the Provestein to prevent any direct bombardment of the dockyards from the King's Channel.[2] The reduction of Copenhagen by a naval squadron operating without the assistance of land forces was out of the question. Behind the iron wall of their fortifications, the Danes could feel secure in the knowledge that Nelson's success could not be repeated in 1807. The city had to be attacked on its land side by an army and forced to surrender. It had then to be held long enough against any attempted relief by the Danes, perhaps assisted by the French, to allow for the safe removal of the Danish fleet to Britain. The part played by the army in this operation has been fully described.[3] How the fleet commanded by Admiral Gambier contributed to the success will be examined here.

The importance of the naval operations against Denmark depended upon the fact that Zealand is an island. It is separated from the rest of the Danish dominions by the Great Belt. The power which commanded the Great Belt was able to prevent any major passage of troops from the mainland into Zealand. When therefore in July 1807 the British Government believed that Denmark would soon declare war against Great Britain and place her fleet at the disposal of France, their first move was to send a squadron into the Great Belt. On 18 July Admiral Gambier was ordered to Danish waters with a powerful fleet. His principal duty for the time being was the military isolation of Zealand. 'His Majesty feels it necessary as a measure of precaution to authorize you to prevent the Danish government from sending any military reinforcements into the island of Zealand from any other part

1 Raeder, *op. cit.*, I, p. 81; *A Tour in Zealand 1802*, p. 62.
2 Wellington, *Supplementary Dispatches*, VI, p. 31; *A Tour in Zealand*, p. 65.
3 J. W. Fortescue, *History of the British Army* (1910), VI, pp. 59 *et seq.*

of the Danish dominions, till you receive further instructions from home, it being of the utmost consequence in the event of a rupture with that power, that the island in which the Danish naval arsenal is situated, should not be strengthened to such a degree as might place it beyond the reach of a combined attack by His Majesty's land and sea forces.'[1]



Gambier, having hoisted his flag on board the *Prince of Wales*, sailed from Yarmouth with the first detachment of the fleet on 26 July. It consisted of sixteen sail-of-the-line, seven frigates, and sixteen sloops and gun-brigs.[2] After an uneventful voyage the ships arrived in company off Göteborg on 2 August. Here the first move of the campaign was made. During the afternoon, Commodore Keats was detached with a squadron of four sail-of-the-line, three frigates and ten smaller vessels.[3] His orders directed

1 P.R.O., W.O. 6/14, Castlereagh to Gambier, 18 July 1807.
2 P.R.O., Adm. 1/5, Gambier to Admiralty, 26 July 1807.
3 P.R.O., Adm. 50/49, Journal of Admiral Gambier, 2 August 1807.

him to proceed to the Great Belt. He was to work through it, detaching the frigates and sloops on the way, stationing them in the most advantageous positions for intercepting all vessels attempting to cross into Zealand or the nearby islands from the western side of the Belt. All ships sailing in the Belt were to be stopped and searched. Those engaged in fishing or trade were to be allowed to continue their journey. Any carrying troops were to be turned back. With his sail-of-the-line, Keats was to proceed through the Belt to its southern end and station them at the entrance to the Baltic. This was to guard against the risk that some Danish line ships might slip out of Copenhagen and work round to the Belt with the object of attacking the small vessels cruising there. He was not, however, to interfere with Danish frigates or smaller naval ships, unless they were acting as troop carriers.[1]

The passage of the Great Belt by Keats was a more difficult task than might be realized. The secrets of its navigation had been closely guarded by the Danes in order to force ships sailing to and from the Baltic to travel via the Sound, the other navigable channel connecting the Baltic and Kattegat. Their motive in doing so was financial. Under the guns of Kronborg, at the northern entrance of the Sound, the famous dues were levied on all passing ships. Keats, therefore, found that the charts issued by the Admiralty were not always accurate. In working through the Belt, the squadron was preceded by the sloop *Mosquito* whose commander, Captain Jackson, was responsible for sounding the channels and marking the various banks and shoals.[2] In such circumstances progress was necessarily slow. The ships-of-the-line were also hampered by underwater currents, strong enough to play havoc with their course. 'I have seen as much wind as would make the ship go 4 knots at sea and in the Belt she would not steer. We were often obliged to anchor, the undercurrent would turn her right round.'[3] This entry in the master's log of H.M.S. *Vanguard* is matched by similar references in the log of the *Ganges* to strong currents, sudden variations in their direction and force, and loss of control over the steering of the ship.[4] Nevertheless, by 9 August, the frigates and most of the small vessels having been disposed in a chain to police the Belt, the *Vanguard*, *Ganges* and *Orion*, together with the *Mosquito* and two gun-brigs, successfully completed the passage and arrived off Møn island.[5] The Belt was cut, and its southern end sealed against any incursion. Later Keats's squadron was reinforced. He had with him during the campaign an average of seven ships-of-the-line,

1 P.R.O., Adm. 1/5, Gambier to Keats, 27 and 30 July 1807.
2 P.R.O., Adm. 52/3778, Master's Log, H.M. Sloop *Mosquito*
3 P.R.O., Adm. 52/3805, Master's Log, H.M.S. *Vanguard*.
4 P.R.O., Adm. 52/3833, Master's Log, H.M.S. *Ganges*.
5 P.R.O., Adm. 1/5, Keats to Gambier, 9 August 1807.

five frigates and twenty-five sloops, gun-brigs and armed transports. As a result, no major reinforcements could be crossed to Zealand to increase the regular Danish forces there, though it was impossible to prevent small leakages.[1]

This precautionary isolation of Zealand virtually decided the outcome of the campaign before a shot was fired. The greater part of the Danish regular army was encamped not in Zealand, but in the peninsular province of Holstein. The regular forces in Copenhagen in August, 1807, numbered only some 5500, mostly infantry. This computation by the Danish historian Raeder can be accepted as being sufficiently accurate.[2] It exceeds very slightly the various contemporary estimates made by the British officers and diplomats.[3] The services of auxiliary forces and militia were also available to the Danes. First amongst these was the Landevaern of which there were two regiments in Zealand. The various battalions were organized on a local basis; and every able-bodied man who was trained to arms was obliged in an emergency to enrol and assist in the defence of his province.[4] The citizen militia of Copenhagen also shared in its defence; and the total number of officially trained auxiliaries in Copenhagen, including Landevaern, Citizen militia, and Students' Corps totalled 7500.[5] The total number of defenders, regular and auxiliary, was about 13,000. This figure does not include seamen and marines. Nor does it include the other levies which were later organized in Zealand in a vain attempt to bring relief to the garrison of Copenhagen.

The strength of this garrison must be judged in relation to the forces which were in the field against it. The British army under Lord Cathcart was just over 27,000. Numerically it was twice as strong as the defending army. The comparison does not end there. Cathcart commanded regular troops. More than half the garrison consisted of irregulars. The Landevaern was a little more than a collection of half-drilled, badly disciplined rustics. 'You will see Sir Arthur Wellesley's report. His 1,500 prisoners are on board the transports, and a most curious spectacle they offer. Striped green and red jackets of a woolen manufacture, long hair and wooden shoes are the principal features of their outward appearance. Of their inward composition you may judge by the most knowing ones among them saying that, after the first fire, they threw away their arms and uniforms, hoping without these unfortunate indications of a soldier, they should escape the

1 P.R.O., W.O. 1/188, Cathcart to Castlereagh (Private), 12 October 1807.

2 Raeder, *op. cit.*, I, p. 93.

3 Wellington, *op. cit.*, VI, p. 32: 4800 regulars, P.R.O., F.O. 22/53; Brook Taylor: 3000 regulars, F.O. 353/29; F. J. Jackson: 'Not more than 4,000 regulars.'

4 Raeder, *op. cit.*, I, pp. 83 *et seq.*

5 Raeder, *op. cit.*, I, p. 93.

pursuit of our troops under the guise of peasants.'[1] It must be admitted that the writer of this description was prejudiced against Cathcart and only too ready to belittle the quality of the Danish soldiers in order to minimize the general's achievement. However, it is supported by other evidence. Despite their nominal proficiency in arms, the men of the Landevaern were disorderly and, on occasion, insubordinate.[2] And these weaknesses were further aggravated by a shortage of good officers. The regimental and battalion commanders of the Zealand Landevaern complained of this lack.[3] General Oxholm, commander of the South Zealand Landevaern regiment, not only lamented the shortage of junior officers; he described the majority of those available as old men 'weak in body and muddled in mind'.[4]

It was with this material that General Peymann, a 73-year old veteran of Hanoverian birth, had to defend Copenhagen against the British. The Danish Government realized that he faced an impossible task as soon as they learnt that the Belt had been cut. Christian Bernstorff, the minister of state, was of opinion before the actual landing by the British had taken place in Zealand, that the island was lost. 'There is no room for hiding from ourselves', he wrote, 'that the inequality of the forces engaged will be such that we cannot indulge in the hope of retaining Zealand for long. It was taken off guard, practically denuded of troops; and is so surrounded by the English, that it is virtually impossible to elude their vigilance and pass reinforcements to it.'[5] The truth is that the Danes had been taken unawares by the British move. They had not been expecting vigorous action by the British Government.[6] And the secrecy with which the arrangements had been shrouded prevented any leakage of information in time for Denmark to make effective counter-measures. The first phase of the campaign was thus successfully completed.

While Keats was working through the Belt during the first week in August, the main fleet lay at anchor off Elsinore. Gambier entered the Sound on 3 August and saluted the fortress of Kronborg. The polite exchanges completed, he had to maintain a watch for any movement on the part of the Danish fleet. He was not yet authorized to attack Copenhagen.

1 P.R.O., F.O. 353/29, Jackson Papers (F. J. Jackson, 1807), F. J. Jackson to Canning, 1 September 1807.

2 Dansk Krigsministerium, *Meddelelser fra Krigsarkiverne*, III, pp. 139 and 141, Peymann, C.-in-C. Copenhagen, to Prince Royal of Denmark, 10 and 16 September 1807 (Copenhagen, 1887).

3 *Med. fra Krigsark.*, III, p. 88, Lieutenant-General Kastenkiold to Prince Royal, 17 August 1807, p. 105; Grev J. Moltke to Prince Royal, 29 August 1807.

4 *Med. fra Krigsark.*, III, p. 97, Major-General Oxholm to Prince Royal, 24 August 1807.

5 E. Holm, *Danmark-Norges Udenrigske Historie 1791–1807* (Copenhagen, 1875), II, p. 269.

6 Holm, *op. cit.*, pp. 229 *et seq.*

Before resorting to extreme measures, the British Government had decided to attempt a negotiated settlement with the Danes.[1] The object of these negotiations was to secure the deposit of the Danish fleet in British custody for the duration of the war. Only in the event of their failure was Copenhagen to be attacked, and the Danish navy seized. It was hoped that the presence of such a powerful fleet off the coast of Zealand and in the Belt might influence the course of the negotiations by demonstrating to the Danish Government the folly of resistance in the face of such an armament. But the British Government's 'measure of precaution' did not have this effect. The envoy Francis Jackson had interviews at Kiel with the Prince Royal of Denmark and Christian Bernstorff on 7 and 8 August. He could not persuade them to surrender their fleet to Britain. Accordingly he travelled to Copenhagen and went aboard the *Prince of Wales* on the morning of 13 August. On arrival he ordered Gambier and his military colleague to reduce Copenhagen and seize the Danish navy.[2]

In the meanwhile the forces necessary for a combined attack had gathered in the Sound. On 8 August a reinforcement of six sail-of-the-line under Rear-Admiral Essington joined Gambier.[3] These ships brought out the army officers from England. On the following day a convoy of 153 sail arrived, having on board the greater part of the troops from England.[4] Another 10,000 arrived in due course from Stralsund where they had been sent early in July to assist the King of Sweden. Lord Cathcart who was recalled from Stralsund in order to take command at Copenhagen reached the Sound on 12 August.[5] Preparations had also been made for the disembarkation of the troops. The transports were assembled by Essington according to brigades, each brigade being under the direction of a naval vessel.[6] When Jackson announced the failure of his mission, all was ready to begin the attack.

Owing to adverse winds there was a short delay. Only on 15 August did the fleet and transports work slowly up the Sound towards Vedbaek, a place some twelve miles north of Copenhagen which had been selected for the landing. They anchored that evening in two divisions. The main body was off Vedbaek. Essington with four ships and a body of transports lay four miles further south with the object of creating a diversion. Next morning the troops went ashore covered by the line-of-battleships anchored offshore. Close support was afforded by the frigate *Surveillante* and a flotilla of gun-

1 P.R.O., W.O. 6/14, Castlereagh to Gambier, 29 July 1807.
2 P.R.O., F.O. 22/54, Jackson to Canning, No. 6, 15 August 1807.
3 P.R.O., Adm. 50/49, Gambier's Journal, 8 August 1807.
4 P.R.O., Adm. 50/49, Gambier's Journal, 8 and 9 August 1807.
5 J. W. Fortescue, *op. cit.*, VI, p. 64.
6 P.R.O., W.O. 1/188, Cathcart to Castlereagh, 22 August 1807.

brigs patrolling in the bay of Vedbaek.[1] No Danish troops arrived on the scene to resist the landing. In the late afternoon, the army was ready to march southwards towards Copenhagen. During this advance no resistance was met, and by midday on 17 August the army stretched in an arc around Copenhagen from Charlottenlund in the north to the sea in the south. Except to the north they were established at a distance of a mile and a half from the walls. Copenhagen was surrounded.

The operations which led to the reduction of Copenhagen lasted until 5 September when an armistice was concluded. Two days later, the terms upon which the city was surrendered to the British were ratified. During the course of these operations, the degree of close support which the navy was able to give to the army was very limited. Since both flanks of Cathcart's forces rested upon the coast, they were exposed to attack from the sea. On 17 August, therefore, Captain Puget of the *Goliath* was ordered to take a squadron of gun-brigs, sloops and bomb-vessels under his command, and to station them inshore in advance of the main fleet and abreast the left wing of the army in order to protect it against attack.[2] At the same time, the whole fleet moved up and anchored off Taarbek, four miles north of the harbour entrance. Puget's squadron was soon put to the test.

The defenders of Copenhagen were unable to make any serious counter-attack on land. The Danish ships-of-the-line were not ready for sea; but Steen Bille, the senior naval officer, had at his disposal a force of some thirty gun-boats and praams. They were vessels of shallow draught, able to work out of harbour under the protection of the batteries, hug the coastline, and, from their inshore position among the shallows, bombard the British lines. Gambier's ships-of-the-line were unable to operate against them in the shallow water. The duty of resisting them fell upon Puget. Hardly had his flotilla taken up its position than Steen Bille ordered the Danish gun-boats to drive it off.[3] After an engagement lasting an hour, the British were forced to withdraw and the army was discomfited by round shot from the Danish squadron.[4] The Danes owed this success to technical superiority. Gambier's gun-brigs were armed with carronades. The Danish vessels mounted long 24- and 32-prs which had a longer range than the carronades.[5] After this reverse, Gambier ordered that the carronades be replaced by 18-prs.[6] But the Danes retained an advantage in gunnery throughout the

1 P.R.O., Adm. 50/49, Gambier's Journal, 16 August 1807.
2 P.R.O., Adm. 50/49, Gambier's Journal, 17 August 1807.
3 *Med. fra Krigsark.*, III, p. 85, Steen Bille to Prince Royal, 18 August 1807.
4 Cathcart's Journal, 17 August 1807. *Annual Register 1807*, p. 683 (Appendix).
5 *Malmesbury Letters 1745–1820*, II, p. 37, Captain Bowles, R.N., to Lord Fitzharris, 25 August 1807 (edited by Third Earl of Malmesbury, 1870).
6 P.R.O., Adm. 1/5, Gambier to Admiralty, 18 August 1807.

campaign. It was demonstrated in a hot duel between the two flotillas on 23 August, when Gambier was again compelled to recall his small craft.[1] In order to protect itself against the Danish flotilla, the army erected a battery at Swan Mill, a coastal hamlet outside Copenhagen.[2] Although the fire of this battery did not put an end to their sorties, it worried the Danes much more than did the resistance of the British light squadron.[3]

The activities of the Danish sea forces did not, however, have anything more than a nuisance value. They made Cathcart, by temperament a cautious man, a little wary about moving his left wing forward when his army advanced on 25 August to within 700 yards of the walls of Copenhagen in order to prepare for the bombardment of the city. But they were quite unable to prevent this general advance. Nor did their attempts to interfere with the preparations for the bombardment meet with any success. On 26 August, one of their number was blown up in an engagement with the Swan Mill battery; and on the following day, two of them operating to the south of the city were roughly handled by a battery erected to protect the right flank of the army.[4]

What Cathcart did fear was that, with the passing of summer, a worsening of the weather would drive off Keats's vessels patrolling in the Belt and allow the Danes, perhaps assisted by the French, to throw sizeable reinforcements into Zealand.[5] Cathcart was strongly criticized by Jackson for his conduct of operations on the ground that he was too slow and hesitant.[6] And there was a general feeling during the campaign that a more thrustful policy ought to have been adopted.[7] Much of Cathcart's hesitancy arose from his realization that the army in Zealand was dependent for its security upon the maintenance of the blockade of the island. He did not believe that either a bombardment of Copenhagen, or an attempt to take it by storm would automatically succeed. He calculated, moreover, that should either of these methods be tried and fail, the resistance of the garrison would stiffen. The only means then left to him would be a siege, a form of operation for which he was ill equipped, and which in any case would prolong the campaign into the late autumn, a season when the squadron in the Belt might be broken

1 *Annual Register 1807*, p. 685 (Appendix); Journal of Admiral Gambier, 23 August 1807.

2 *Annual Register 1807*, p. 683 (Appendix); Cathcart's Journal, 18 August 1807.

3 *Med. fra Krigsark.*, III, p. 86, Steen Bille to Prince Royal, 19 August 1807.

4 *Tidsskrift for Søvaesen*, LXXII (Copenhagen, 1901), p. 579, 'Dagbog ført af H. A. Molbech ombord Kanonbaaden *Nyekjobing* 1807'.

5 P.R.O., W.O. 1/188, Cathcart to Castlereagh, 31 August 1807.

6 *Letters and Diaries of Sir George Jackson*, II, p. 201 (edited by Lady Jackson, 1872).

7 *Malmesbury Letters 1745–1802*, II, p. 39, Captain Bowles to Lord Fitzharris, 25 August 1807.

up by bad weather.[1] Seeing the problem from this angle, he hoped that the display of strength outside Copenhagen might induce Peymann to surrender the fleet before the army was committed to the possibility of prolonged operations and the consequent danger of intervention from the mainland. These same considerations influenced both Cathcart and Gambier when they issued a joint summons to Peymann on 1 September, inviting him to deposit the Danish fleet in British custody until the end of the war. The summons was framed in this manner, despite the Government's preference at this stage for an unconditional surrender, on the grounds that Peymann, if offered the original terms, might, under threat of bombardment, yield.[2] Only after these terms were refused did Cathcart accept the inevitability of a bombardment. On the evening of 2 September, the batteries opened fire.

The formal capitulation of the city and the Danish fleet which took place on the 7th was, therefore, due immediately to the operations of the army. The army was superior in numbers, organization and discipline to the forces opposed to it. It owed this superiority to the fact that the navy had cut the communications between Zealand and the rest of Denmark. Throughout the campaign the control of the Great Belt was the decisive factor. Bernstorff, as we have seen, admitted it. Cathcart was only too aware of the reality of the situation. A less prudent man might have forestalled the criticism to which he has been subject by making an all-out attack upon an inferior enemy without delay. Cathcart's opinion was that, in the circumstances, he could not afford to make the final attack until he was as certain as he could hope to be that this attack, when launched, would be successful in a short time. His conduct of the campaign was based on the recognition of the fact that the army in Zealand was ultimately dependent upon the support and co-operation of the navy.

1 P.R.O., W.O. 1/188, Cathcart to Castlereagh, 31 August 1807.
2 P.R.O., W.O. 1/188, Cathcart to Castlereagh, 3 September 1807.

LORD COCHRANE'S GREEK STEAM FLEET

By Douglas Dakin

THE idea of employing Lord Cochrane in Greece occurred to many, but the plan to provide him with a steam fleet originated with Captain Frank Abney Hastings, a brilliant and intrepid sailor who as a boy of ten had fought in the *Neptune* at Trafalgar. Hastings had gone to Greece as a volunteer in April 1822 and shortly after his arrival he suggested to Admiral Miaoules the idea of buying a steamship and of arming her with four 68-prs. Nothing came of this early suggestion, but Hastings, hearing that the Greeks hoped to raise a loan in London, submitted several memoranda to Byron suggesting that part of the proceeds should be spent on steamships.[1] Byron's early death caused delay, but in July 1824, Hastings, assisted by that indefatigable Philhellene, Edward Blaquiere, persuaded the Greeks to buy two steam vessels. He himself undertook to contribute £5000 and to go to England to find the ships and the armament.[2] It was not, however, until the second Greek loan of February 1825 had been raised that an order was placed for the building of a steamship. On 5 March 1825 the Greek representatives in London, Orlandos and Lourriottes, requested Messrs Ricardo, the agents for the loan, to pay £10,000 to Edward Ellice of the London Greek Committee. Ellice had undertaken to arrange for Brent to build a corvette of 400 tons and for Alexander Galloway of Smithfield to fit the engines. It was understood that this vessel, the *Perseverance*, should be ready by August.

After arriving in England Hastings managed to persuade the London Greek Committee to take up with the Greek Deputies the question of providing for Greece a regular navy equipped with steamships. At the time the Greek Deputies were under orders from their Government to spend £150,000 on a military expedition under a Western commander, a plan which Hastings considered a waste of money. Already there had been much talk of employing Cochrane, and Hastings seized the opportunity to link up his plan for steamships with Lord Cochrane's glorious reputation.[3] In

1 A. J. B. Wace, 'Hastings and Finlay', in *Annual of the British School at Athens*, vol. XXII, p. 113; G. Finlay, *History of Greece* (1877), VI, Appendix I, pp. 335–40; Col. L. Stanhope, *Greece: 1823 and 1824*, p. 83.

2 E. Blaquiere, *Narration of a Second Visit to Greece* (1825), II, p. 119. Greek Order No. 3710, 12/14 August 1824. Copy in P[ublic] R[ecord] O[ffice], C.O. 136/27.

3 See Deputies to Greek Government, 19 July 1825, in E. Dalleggio, *Les Philhellènes et la Guerre de L'Indépendance* (Athens, 1949), p. 31; Hastings to Finlay, 29 July 1825, in Wace, *op. cit.*, p. 115.

August members of the London Greek Committee began to press the scheme with the Greek Deputies.[1] 'Within a few weeks', said Ellice, 'Lord Cochrane will be at Constantinople and will burn the Turkish vessels in the port....'[2] And Cochrane himself on returning to England in June 1825 had boasted to the Greek Deputies that he would go to the Levant with only two frigates and three steam vessels and burn Constantinople to the ground.[3]

The Greek Deputies, despite their orders to provide an army, signed on 16 August 1825 a provisional contract with Burdett, Ellice and Hobhouse. Cochrane was to command the 'Greek Auxiliary foreign marine' for the duration of the war: he was to be paid £37,000 on signing the contract and a further £20,000 as soon as Greece were freed. On their side the Greek deputies were to purchase and equip five steam vessels in addition to the *Perseverance*. These vessels were to comply with Cochrane's specifications. They were to be ready in two and one-half months at the latest. The initial cost of the expedition was not to exceed £150,000, including the £57,000 due to Cochrane, but excluding the £10,000 already advanced to Ellice.[4]

Though the Greek Deputies had no authority to purchase more than two steam vessels, they were nevertheless under earlier instructions, dated 26 August 1824,[5] to buy eight sailing vessels of 15 guns a side, and they had been in touch with William Bayard, Chairman of the New York Greek Committee, who advised them to obtain two 50-gun frigates at 247,000 dollars each. Into the details of the scandals that subsequently arose with regard to the building of these two ships, there is not time to go. Suffice it to say that after long delays the Greeks had to sell one ship for 221,487 dollars to the American Government in order to pay for the other, the *Hope* (renamed the *Hellas*) which cost them £155,000. In building the steam fleet the Greek Deputies encountered even greater difficulties. At first it was the intention to buy ready-built steamships and Cochrane told the Greek Deputies that he would call at Liverpool and Glasgow to find some steam vessels ready for arming. Sometime later, however, Orlandos and Lourriottes learned from Hastings that the Ricardos had signed contracts with Gordon and Brent for building four vessels and with Galloway for fitting them with engines.[6] Two vessels were to be approximately of the same size as the *Perseverance*, 150 ft. long with a 25-ft. beam. They were each to have

1 Hobhouse to Greek Deputies, 5 August 1825, British Museum, Add. MSS. 36461, fos. 192–5.

2 Greek Deputies to Burdett, Hobhouse and Ellice, 24 May 1826, Add. MSS. 36462, fos. 194–5. Also Dalleggio, *op. cit.*, pp. 188–91.

3 Deputies to Greek Government, 19 July 1825, Dalleggio, *op. cit*, p. 31.

4 Add. MSS. 36461, fo. 226.

5 Greek Order No. 3709. Copy in P.R.O., C.O. 136/27.

6 A. Lourriottes, *Correspondence respecting the steam vessels*... (1827), p. 8.

two 50 h.p. high-pressure engines. The other two vessels were to be 100 ft. long with a 16 ft. beam and were to carry two 20 h.p. engines. All the engines were to be of the high-pressure type. Various dates were stipulated for the completion of the ships, the date for the last being 25 November 1825. The fifth vessel was not mentioned in this contract, but it was subsequently arranged that she should be built according to the specifications of the two smaller vessels.[1]

It was a great blunder to entrust the engines to Galloway who had already been found wanting in his work on the *Perseverance*. As Hastings explained to Hobhouse, and he was not romancing, Galloway's defaults were deliberate sabotage, for his son was in the employ of Mohamet Ali of Egypt.[2] Hence Galloway, though free with excuses, made no real effort to finish the work; and Cochrane, hearing of the delays, went up to London early in November to expedite matters, only to learn that the Government had decided to prevent his going to Greece by prosecuting him under the Foreign Enlistment Act of 1819 for his service in South America.[3] On the advice of Brougham, Cochrane slipped over quietly to Boulogne and thence to Brussels, leaving it to his brother, Major Cochrane, and Hastings to deal with Galloway.

Hastings, Ellice and the Greek Deputies finally obtained, through Hobhouse and Burdett, Cochrane's agreement that the *Perseverance* should be given priority over the other vessels and his Lordship even offered to go to Greece with the one steamship and two schooners, *Unicorn* and *Union*.[4] He also fell in with Hastings's suggestion that the frigates building in America should be sold and the proceeds spent on steam tugs for towing armed smacks and gunboats.[5] But this plan was not adopted. Though the Greeks were in trouble with their frigates they preferred to straighten out that matter themselves. At the same time they offered Galloway an additional reward to speed up the *Perseverance* and the other two larger vessels, *Enterprize* and *Irresistible*.[6] But although Galloway was as free with his promises as with his excuses, the work progressed only very slowly. At the beginning of May 1826 the *Perseverance* was still not ready; it was clear that the *Enterprize* and *Irresistible* would not be completed for a very long

1 Lourriottes, *op. cit.*, pp. 34–5.

2 Hastings to Hobhouse, Add. MSS. 36461, fos. 278–80; Finlay to Messrs Ricardo, 19 March 1827, P.R.O., C.O. 136/43.

3 *Journal of Mrs Arbuthnot* (1950), I, pp. 414–16. See also Canning to Wellesley, 27 September 1825, Wellington, *Correspondence and Despatches*, New Series, II, pp. 506–7.

4 Add. MSS. 36461, fo. 414 *et passim*.

5 Cochrane to Hobhouse, 1 January 1826, Add. MSS. 36461, fo. 380.

6 Greek Deputies to Hobhouse, 26 March 1826, Add. MSS. 36462, fo. 53; Lourriottes, *op. cit.*, pp. 24–9.

time; while the three smaller vessels, *Alert*, *Lasher* and *Mercury* were found to require lengthening by 15 ft.[1]

By now Cochrane's patience was exhausted. Tired of waiting, on 13 May he paid a quiet visit to Galloway's yard. On learning how matters stood, his first impulse was to throw up the expedition altogether,[2] but he finally consented to carry on, providing the whole fleet were got ready for him within a reasonable time. When on 18 May 1826 the trial of the *Perseverance* passed off fairly satisfactorily, he agreed to depart as soon as the *Enterprize* and *Irresistible* were on the point of completion: in the meantime he would go over to Ireland with the schooners *Unicorn* and *Union*.[3]

On his way to Ireland, Cochrane waited off Falmouth to watch Hastings (who had left Deptford on 26 May 1826) pass in the *Perseverance* on his way to the Mediterranean. This vessel carried no armament, for that would have contravened the law. Her guns had already been despatched via America while coal supplies had been sent direct to Greece in an English vessel, in which sailed Captain John Hane, Hastings's old companion in arms in Greece, who had been appointed to prepare the armament.[4] This armament was lost for a while in America[5] but was later found and embarked in the *Hellas* which, leaving on 4 October, finally reached Greece on 8 December.[6]

Having been misinformed that the *Enterprize* and *Irresistible* were on the point of completion, Cochrane left Bantry Bay on 12 June 1826 and arrived at Messina on 12 July. Here he waited. In October he went to Marseilles, only to become the sad spectator of the frigates which French shipbuilders were speedily building for Mohamet Ali. All this time Galloway continued to default. The Greek Deputies vainly endeavoured to sell the ships in order to purchase in their place some ready-built steam vessels.[7] Shortly afterwards they learned that Messrs Ricardo, Hobhouse and Burdett had stopped the work on the smaller craft. This interference prompted them to enquire what had happened to the £160,000 set apart for the steam fleet, and on 12 August 1826 the Ricardos produced a statement. This showed that already £123,109. 8*s*. 2*d*. had been spent, which sum included the cost of the *Perseverance*.[8]

The time for recriminations was now at hand. The Greek Deputies accused the Ricardos of keeping them in the dark and of causing the delays.

1 Greek Deputies to Cochrane, 13 and 17 April 1826, Lourriottes, *op. cit.*, pp. 29–33
2 Cochrane to Hastings, 13 May 1826, Add. MSS. 36462, fo. 139.
3 Major Cochrane to Hobhouse, two undated letters, Add. MSS. 36462, fos. 178, 180.
4 See Th. Vaghenas, *The Armament of the Perseverance* (Athens, 1948; in Greek).
5 Ricardo to Hobhouse, 10 May 1826. Add MSS. 36462, fo. 126.
6 Add. MSS. 36462, fo. 375.
7 Add. MSS. 36462, fos. 194–5, 214.
8 Lourriottes, *op. cit.*, pp. 59–67.

The Ricardos replied that they were merely money agents acting under Cochrane's orders. This was true enough: but it did not explain away their failure to keep the Greek Deputies informed. The contract had said that the Greek Deputies were to provide the steam fleet according to Cochrane's specification. Even if this merely meant that the Deputies were only to authorize payments while Cochrane or his agents arranged for the work, Orlandos and Lourriottes were at least entitled to the fullest information. The Deputies and the Ricardos were in agreement, however, in assuming that it was Cochrane's responsibility either to manage the business himself or to appoint agents to act for him; and Hobhouse who at first took the view that it was the duty of the Deputies to procure the ships[1] later agreed that the responsibility rested entirely with Cochrane. But whatever Cochrane may have understood by the terms of the contract, it is a fact that from the beginning he ignored Orlandos and Lourriottes. As Hastings rightly says: 'He took the responsibility on himself. The high pressures and the forms of the vessels were his in opposition to others. The choice of Galloway was also his.'[2] Moreover, Cochrane had always set out to give the impression that ready-built vessels were unobtainable; but Hastings and Ellice had both ascertained that suitable steamships could have been bought at a reasonable price.[3] Yet although Cochrane acted on his own, he always assumed that Hobhouse, Burdett and Ellice were a sort of committee to carry out his decisions. As these three did so much there was some excuse for so regarding them; but they themselves contended that they were mere go-betweens, and that they never interfered but merely helped when asked to do so. As a fact no committee was ever set up. Hence no one could really take decisions except Cochrane, who, having taken wrong ones, thought that it was everybody's business to set matters right. At a very late hour (June 1826) Cochrane appointed Captain T. S. Crosby and Lieutenant G. B. Hutchings to supervise Galloway. But though these officers kept Galloway busy (his son had left Egypt by that time) they could not solve all the difficulties. The high-pressure engines were defective, the amount of steam procurable being insufficient unless the boilers were stoked up to a point that made them likely to burst.[4]

The trials of the *Enterprize* held in October and December 1826 were quite unsatisfactory,[5] but at length in April 1827 this ship left the Thames with Captain Crosby in command. In the Channel her engines stopped

1 Hobhouse to Greek Deputies, 14 September 1825, Add. MSS. 36461, fos. 204–2.
2 Hastings to Hobhouse, 9 October 1827, Add. MSS. 36464, fos. 166–7.
3 Add. MSS. 36464, fos. 68–71; Lourriottes, *op. cit.*, p. 10.
4 Add. MSS. 36462, fo. 358; 36463, fos. 273–5.
5 Hobhouse to Stanhope, 29 December 1826, Add. MSS. 36463, fo. 122.

three times: she next burst a boiler and had to be towed into Plymouth. It was not until September 1827 that this unsatisfactory vessel (renamed the *Epicheiresis*) arrived in Greece.[1] The *Irresistible* (renamed *Hermes*) did not reach Greece until September 1828. She too was very unsatisfactory. The *Mercury*, one of the smaller vessels, was taken to Marseilles by Edward Blaquiere and was there handed over to Lord Cochrane who, leaving Marseilles on 18 September 1828, took her to Greece where he consigned her to the Greek Naval Commission, shortly before he left the Greek service on 20 December 1828,[2] No money was left to finish the other two vessels, which were allowed to rot upon the Thames.[3]

Such was the fate of a brilliant idea. If only Cochrane could have had a flotilla of six reliable and well-armed steam vessels he could probably have freed Greece in a matter of weeks, and Codrington would have been denied the honour (if such it was) of fighting the battle of Navarino. Cochrane would also have demonstrated a revolution in naval architecture. But as things turned out it was left to Hastings in the *Perseverance* alone, under her Greek name, the *Karteria*, to point the way in the transition from sail to steam.

When under canvas the *Karteria* was a good if somewhat slow sailer.[4] But as a steamship she had several critical defects. Her two 42-h.p. engines were not quite powerful enough for her weight of 400 tons and they often failed at critical moments; her paddles were too heavy and too high in the water; and her speed under steam even in the most favourable conditions was barely seven knots.[5] On her outward voyage she proceeded for the most part under sail and suffered no mishaps; but shortly after reaching the Mediterranean her boilers burst, and Hastings was delayed in Sardinia. He finally reached Nafplion (Nauplia) on 14 September and next day he was officially appointed to command his vessel. This ship, so long and anxiously awaited, was the wonder of the day. Everybody, needless to say, wanted to go for a trip in her; and even the Greek Government, so Hastings complained, seemed to regard her as a pleasure steamer. Yet these same people also thought that Hastings ought to deal immediate destruction to the Turkish and Egyptian fleets, and great was the disappointment when Hastings calmly set to work to exercise his crews, and, finding them wanting, went off to Toulon to recruit foreign seamen.[6]

After returning from Toulon, Hastings planned to use the *Karteria* to

1 Hastings to Church, 9 October 1827, Add. MSS. 36544, fo. 173.
2 G. Cochrane, *Wanderings in Greece* (1837), I, pp. 132–3.
3 Add. MSS. 36463, fos. 24, 68, 176, 273–5, 276–9, 286.
4 Hastings to Hobhouse, 8 June 1826, Add. MSS. 36462, fo. 253.
5 Various letters of Hastings, e.g. Add. MSS. 36462, fos. 353, 349; 36544, fo. 196.
6 Hastings to Hobhouse, 5 October 1826, Add. MSS. 36462, fos. 360–2.

tow during calms a new type of *brulot*, which Captain Hane undertook to construct. But while Hane still searched for the materials to carry out this plan, on 8 December 1826, the beautiful ship *Hellas* arrived bringing the 68-prs and carronnades, which had now to be fitted, along with devices for heating shot in the furnaces and for slinging it to the breeches of the guns. Hastings had long been interested in improving the methods and the speed of firing hot shell and after some experience with the *Karteria* and its devices, he published in 1828 a memoir on the subject. 'My people', he wrote, '. . . employ [hot shells] with as little apprehension as if using cold shot', and he went on to say that during her first year in Greece the *Karteria* fired 18,000 of these heated missiles. What is more, she could fire with great rapidity. Using her paddles to revolve, she fired in rotation from the bow, port side, stern and lee side. She could fire effectively while remaining outside the range of the normal shore batteries she encountered and of the guns of the Turkish vessels. But she never came near to a squadron of sail in open water (the enemy fled when she was about) and she never had the good fortune to come upon him in a calm.

The *Karteria* was employed chiefly against ships under the protection of shore batteries or against defended positions on the coasts.[1] During February 1827 she supported General Gordon's landing on the Munychia.[2] The next month she attacked and captured two Turkish brigs under the batteries of Oropos.[3] On 20 April 1827, accompanied by other craft, she destroyed three vessels and captured five laden brigs lying under the Castle of Volos.[4] Four days later she destroyed a Turkish man-of-war and three prize ships protected by twelve shore guns at Tricheri.[5] Her next mission (May 1827) came to nothing owing to engine trouble. After a period of inaction she sailed to the Gulf of Corinth to support General Church's campaign in Western Greece, and on 30 September she destroyed seven Turkish vessels and took five prizes which were sheltering beneath shore batteries at Salona (Amphissa).[6] Her next important mission (28 November and 4 December 1827) was to transport General Church's 'thousand' from Cape Papas to Dragomestri in Western Greece.[7] Towards the end of December she was

1 The log book of the *Karteria* is among Finlay's papers in the British School in Athens.

2 See Dr S. G. Howe, *Letters and Journal* (1907), pp. 206 ff.

3 Finlay to Messrs Ricardo, 19 March 1827, P.R.O., C.O. 136/43.

4 Hastings to Cochrane, 23 April; Cochrane, *Life*, II, pp. 370 ff.; Hastings to Messrs Ricardo 1 May 1827, C.O. 136/43. See also Blackwood's, October 1845, Finlay's Biographical Sketch of Hastings.

5 Hastings to Cochrane, 24 April 1827, Cochrane, *op. cit.*, pp. 374–5.

6 Church, Narrative of the Greek War, Add. MSS. 36563, fo. 335; Hastings to Church, 24 September 1827, Add. MSS. 36544, fo. 167; Blackwood's, *op. cit.*; Lee to Mudford, 30 September 1827, C.O. 136/44; Church, *op. cit.*, fos. 351 ff. This battle is usually wrongly dated 29 September.

7 Church, *op. cit.*, Add. MSS. 36465, fos. 27 ff.

employed to take Vasiladhi, one of the island forts guarding Mesolonghi.[1] The following May, Hastings transported her big guns into the lagoons of Mesolonghi to support General Church's attack on the island fort of Anatoliko. It was during this action that Hastings was wounded. He went in the *Karteria* to Zante to consult a surgeon, but died at 8.30 p.m. on 1 June 1828, shortly after reaching the lazaretto.[2]

After Hastings's death the *Karteria* performed no outstanding feat. The other steam vessels saw hardly any action at all, although on 3 October 1828 the *Epicheiresis* (Captain Brommy) assisted the *Karteria* (Captain Falanga) in bombarding the forts on the Straits of Preveza while an Ydriot flotilla forced its way into the Gulf.[3]

During the Civil War of 1831 the Greek admiral Miaoules seized and blew up the *Hellas* and the *Karteria* to prevent them being used by the Greek President, Count Capodistria. Such was the sorry end of the famous steamship. But she was not, indeed, the first naval sailing ship with auxiliary steam-power. Mention has already been made in this *Journal* of the *Diana* (Burma River War), the *Seagull* (U.S.A. Navy) and the *Pluto* (Indian Navy).[4] Again, Cochrane, when in the Chilean service, had ordered a steamship, the *Rising Sun* (1820), which was fitted with engines by Galloway, but she arrived too late for Cochrane to employ her.[5] Moreover, as Hastings himself knew, Mohamet Ali had an old Margate packet steamer, which mounted three guns and which, Hastings feared, might at any moment be more heavily armed by the French naval officers in Mohamet Ali's service.[6] Some time in 1826 the Greeks intercepted a ship carrying machinery from Galloway to Mohamet Ali. Actually the machinery was useless, but the same ship carried guns made in the same mould as those of the *Karteria* and it may have been the intention to instal them in the steamer. The intercepted ship was also carrying certain correspondence between Galloway and Mohamet Ali, correspondence which Finlay saw and which Mavrokordatos intended to publish.[7] We do not know, however, what was in these letters, for they were never published and they have never subsequently been found. Finlay, in reporting their existence to the brothers Ricardos, merely cites them as proof of Galloway's delaying the completion

1 Hastings to Church, 27 and 29 December, Add. MSS. 56544, fos. 199, 200; Church, *op. cit.*, fos. 32–3.

2 Cf. Finlay, *History*, VII, p. 24.

3 Sir Frederick Adam to Stratford Canning, 11 October 1828, Add. MSS. 36564, fo. 115.

4 See Vol. 30, p. 223; Vol. 31, pp. 47–8.

5 C. Lloyd, *Lord Cochrane* (1947), pp. 144, 172, 176.

6 Hastings to Hobhouse, 9 November 1825, Add. MSS. 36461, fos. 278–80.

7 Mavrokordatos to Captain Hamilton, 22 January 1827 in Anglo-Hellenic League Publication No. 57, p. 19; Finlay to Messrs Ricardo, 23 March 1827, C.O. 136/43

of the steam vessels until his son managed to get away from Egypt. All this we know from other sources, from Galloway's own letters, and from letters which the young Galloway wrote to his father. What is significant, however, is that Galloway was just as happy defrauding Mohamet Ali by selling him useless machinery as in cheating the Philhellenes by delaying the construction of the *Karteria*. But when Galloway finished that vessel he did try to complete the others, and became insolvent in his attempt to do so: and, as we have said, the chief difficulty was the technical one arising from the defects of the high-pressure engines.

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NOTES

A GANG OF SHROUDS

In the Captain's Journal of the *Garland*, in 1752, there is an entry that the people were employed in cutting out a gang of new main shrouds. Presumably the expression is akin to a ganger of cable, but the use of the word in this way may be unusual. C. G. P. J.

EARL SPENCER AND THE NAVAL MUTINIES OF 1797

The following letter, in the possession of Major David Fisher-Rowe, throws an interesting light on the reactions of the First Lord to the situation that awaited him when he arrived with the Admiralty party at Portsmouth on 18 April 1797, and may perhaps supplement in some small way the articles on the Mutinies by Mr Bonner-Smith that appeared in Vols. XXI and XXII of *The Mariner's Mirror*.

The Admiralty party had arrived at the 'Fountain' at noon on the 18th, but only decided to consult the captains of the ships concerned on the 19th. The general opinion of officers throughout the Fleet until that date was that the Admiralty authorities, who from the start had underestimated the seriousness of the trouble, were persisting in their wilful or fatuous refusal to see either the facts or the implications of the position, they were merely trifling with the matter, and were aggravating an already intolerable situation. They were content to be spilling vast quantities of ink, at a moment when it seemed extremely probable that the men might be infuriated into spilling vast quantities of blood. But after the shocked realization on the 19th that the mutineers did not mean to accept gratefully what the Board was prepared graciously to concede, there was considerable official despondency and alarm, the record spoke of 'this most alarming business... big with the most fatal consequences', and it was after 'this anxious evening' that the decision to consult the captains was taken. Captains and Board met the following morning, and the result of that meeting was a complete *volte face* on the part of the Admiralty; in other words, Spencer, Burke's follower, at last made belated recognition of the truth of his master's contention, voiced in 1769, that where the Navy was concerned, the 'sacred name of economy' should not be 'bestowed upon arbitrary defalcation of charge'.

It is to the letter that Spencer wrote in a wretched mixture of alarm and humiliation after receiving the opinions (and opinions straight from the shoulder) of the captains, that Pitt replied in the brief note printed in the *Spencer Papers*.

Downing Street,
Thursday, midnight, 20th April, 1797.

My dear Lord,

Before any letter can reach you, I think the business must have been brought to a point. At all events I see no ground to suggest anything new, and have no doubt in my mind of the propriety of your decision, and of the proposal mentioned in your letter of ½ past three today. I most anxiously hope it will produce the intended effect. The amount of the expense is comparatively of no consequence.

Yours most sincerely,
W. Pitt.

Pitt, who with the last sentence of his letter showed himself a paragon of Prime Ministers in naval matters, had constantly throughout his career to administer verbal or written bromides to colleagues of less serene temperament than himself; how much Spencer needed such a sedative may be seen towards the end of his letter.

Portsmouth,
April 20, 1797.

Dear Sir,

I write in great haste to tell you that on a very long discussion with all the Admirals and Captains of the Fleet this morning, which is just concluded, we have found it absolutely necessary to go a greater length than I mentioned in my letter to you [?] last night. They were unanimously of opinion that the Order as we had drawn it would not stand a chance of putting a stop to the Mutiny, and were also almost unanimous that if we were determined on conceding according to the plan now proposed, it would succeed. It seemed so great an object to have their opinions fully with us for the purpose of inducing them to make the test of any proposal we might make, & I trust they now are all determined to use every exertion for that purpose, & that the liberality of the proposals will put it in their power to use them with success.

I tremble when I state to you (very roughly it must be) the outline of what has been agreed upon, namely

a 5/6 Addition } Such an addition to the wages of Able Seamen as to make them a clear 28*s*. per month, after deducting their stoppages.

b 4/6 Addition } Such an addition to the wages of ordinary seamen as to make them a clear 22*s* per month.

c 3/6 Add^{n} } To landsmen as to make them a clear 21*s* per month

That the Purser's 8ths in the Allowance of Provisions be no longer deducted, & till the necessary steps can be taken for carrying this into effect short allowance may be allowed in lieu of it. What this amounts to requires a good deal of calculation but I should guess about 1/6 per month to every man victualled aboard the Fleet. The Marines when embarked to receive the same allowance as they now do on shore, which will be an addition of something more than 2^{d} a day to them.

On the best calculation I can make of this (which must however be rather inaccurate & certainly errs by making it larger than it should be) the additional expence per An. to Gov^{t} of these several regulations will exceed 400,000*£*, but if it should succeed in restoring to us the Channel Fleet which is now absolutely lost to the country as much as if it was at the bottom of the sea, it may perhaps be pardonable to have yielded to it, to restore the discipline of the Fleet completely I fear will hardly be possible, the blow it has received is in its effects incalculable.

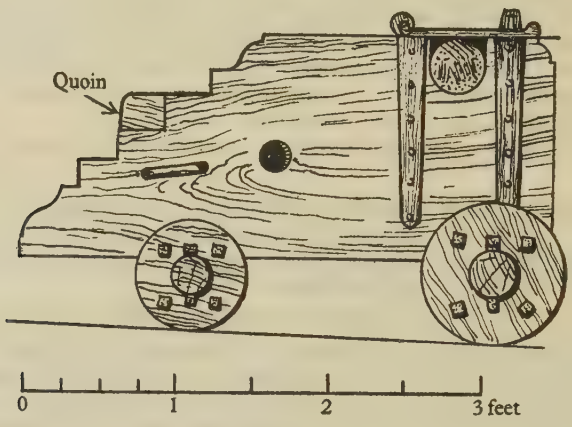
If after all this should not bring these people to a sense of duty, I feel it incumbent on me to engage in the most positive manner that no consideration upon earth shall induce me to go a step further. The consequences of their persisting are so horrible that I scarce dare think of them, but be they what they may, a stand must be made somewhere, & if not made here with effect and success can never be made at all. In that very extreme case, Government will have to decide between an attempt to induce by force a power very much superior to them at the present moment, or allow the Fleet of this country to be directed by a Committee of Seamen, who can only be supposed to be instigated by our enemies, for to no other cause can I attribute their refusal of such an offer, if, which God forbid, they should refuse it. I have pledged myself so strongly to the officers here to adhere to this resolution that it will be impossible for me to recede from it, & indeed I think it must be impossible for anyone to go further without giving up everything into their hands, but if on a fair and full review of the whole transaction you should agree that anything more is to be held out, I desire that I may not stand in the way of an arrangement for that purpose, but I will not be a party to it. Indeed, to confess the truth to you in confidence, I have suffered so much on this occasion in my own estimation and feelings that I much doubt whether I shall ever hereafter be able to [attend to] duty with that confidence in myself without which I know it is not to be executed with any benefit to the Publick,

Believe me, Dear Sir,
Ever most truly and faithfully yours,
Spencer.

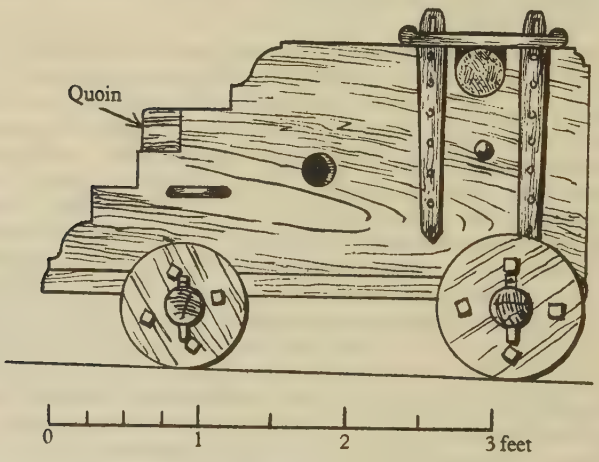
STEPHANIE PLOWMAN

OLD NAVAL GUN-CARRIAGES

Mr J. D. Moody's useful and interesting article in the *M.M.* (November 1952) prompts me to submit the accompanying sketches of Dutch naval gun carriages. These are taken from two drawings by Willem Van Gent, dated 1749, showing the midship sections of Dutch and English bomb-vessels.



Dutch



English

Both carriages are very similar, the only important difference being that the one called 'English' is a table carriage. The guns are designed to be hung by the thirds, and the trunnions are set deeply into the brackets; they are kept in place by flat cap-squares, forelocked to iron loops passing through, welded to, or forged solid with, heavy iron straps leading from the top almost to the bottom of the brackets. These are presumably U-shaped and nailed to, or riveted through the brackets. There is only one eyebolt, for the outhaul tackle, in the brackets, the breeching passing through holes in the centre of the brackets. The trucks are of interest as they seem to represent an early example of the built-up type used in the nineteenth century.

DAVID C. WRAY

THE DOLPHIN-STRIKER

In *The Times* of 20 February 1953 there was a reference to a copper ship-model serving as a weather-vane on the Seamen's Church in Whitechapel. 'The ship was built in the style of 1810. The dolphin-striker below the bowsprit was of the type introduced in 1774, the main boom of the period 1788 and the topgallant yards of 1670'. There was a mention of 'the records' as explaining 'the American touch in the make of the bowsprit' by the fact that the builder of the model had served in the American Navy, but it is not clear whether my first quotation was also taken from 'the records' or was due to the writer of the notice.

In any case it would be useful to know what authority there is for describing the dolphin-striker as 'introduced in 1774'. Up to very recently the earliest evidence for this fitting has belonged to 1794, when it suddenly appears in an American printed rigging-plan and in Steel's *Art of Rigging*. I have also seen a drawing by Pocock dated 1794 and showing a dolphin-striker. A note by Mr Brewington in *The American Neptune* for January 1953 mentions its inclusion under the name 'martingale-stretcher' in a specification of 1794 and its appearance in a painting almost certainly made in 1791 or 1792. This note ends with the opinion that 'one must conclude that the dolphin-striker was devised just about 1790', and that is exactly what I should have said about it myself. If we are to put back the date by 16 years or so, we ought to have 'chapter and verse', not merely a vague reference to 'the records'.

As for 'the main boom of 1788' and 'the topgallant yards of 1670' I know nothing. Perhaps some reader can suggest what these descriptions mean, and why these particular dates should be mentioned.

R. C. ANDERSON

THE *ANTONY OF HULL*

In the middle decades of the fifteenth century frequent mention is made of a craft, variously described as of 400 and of 450 tons, called the *Antony of Hull*. Early in the 1450's she was engaged in the Iceland trade contrary to the statute of 1432, which enacted that no ship might sail to that land without special licence; and in 1454 the Council sent orders for her arrest. For a time she seems to have escaped; for in 1456 a craft described as *l'Anthoine de Houlf*, of 400 tuns, was concerned in a law-suit at Bordeaux (it was by no means unusual for vessels which made the voyage to Iceland early in the year to sail to Gascony in the autumn). The *Antony* and her merchandise were eventually forfeited to the Crown; in 1464 it is stated in the Patent Rolls that both ship and cargo were granted to the King's kinsman, John, Earl of Northumberland; and, some time later, a licence was issued to her new owner to send her to Iceland. The *Antony* is heard of again in 1467, when Nicholas Elys, Edward Copendale, and other merchants of Kingston upon Hull were licensed to take her to Iceland. According to the English customs accounts (P.R.O.: E/122/62/9) the *Antony* sailed from the Humber on 1 June 1467 with a large general cargo valued at £480. The particulars of her lading were as follows:

lxxx lastis barlie mele
lxx lastis beere
iiii^{or} lastis butiri
vi lastis mellis
cclx quarteriis brasii
m horshoue
cc ulnis panni linei
cc lb cere
xl lb. fili
xii duss. bonettis
xx duss. zonarum
lx gross. punctis
xl waynscottes
cc ores
iiii^{or} lastis osmondi
iii lastis picis et bituminis
xxiiii felthattes

In the *Registres des grands jours de Bordeaux* some important information is forthcoming about the *Antony's* construction, rigging, and gear. 'Preterea dicebant sepedicti actores quod, pro dictam navem regendo, gubernando ac etiam conducendo de portu de Houlf usque ad Burdega-

lam, erant et sunt quam plurima necessaria, in portu seu portagio supradicto, ut dictum est, minime comprehensa; videlicet: mercatores, magister et nonaginta marinarii ipsius navis, usque ad quinquaginta dolia, armamenta seu habituamenta, lecti, artilliera pro defensione dicti navis, barrileta, arche seu coffreria, vessella et alia utensilia, usque ad quadraginta, duo batelli, *flamberna* nuncupati, et unum coquetum, usque ad viginti, ancore et corde seu cableria, usque ad sexdecim, velum, virga cum bonetis, misen . . . et aliis preparatoriis ipsius navis, usque ad sex dolia ponderantes seu ponderantia; necnon, et pro dicte navis provisione victualium pro sex mensibus', etc.

It will be seen that the case of the *Antony* illustrates the tendency of English vessels of the fifteenth century not only to increase in size, but also to carry an improved rigging and sail-plan. Though the *Antony* was by no means the largest merchantman of her day, vessels of 450 tuns were still comparatively rare. It was probably the introduction of a second and third mast which made possible this substantial increase in the size of ships. It is certain from the document quoted above that the *Antony* was fitted with a mizzen-mast, and quite probable that she also carried a fore-mast; for after the word 'misen' there follows a passage which is unfortunately indecipherable, and which may very well include a reference to a third mast. In conclusion it is to be observed that the *Antony of Hull* is the only known instance of a two- or three-master employed on the ocean trade-route to Iceland. G. J. M.

OLD FISHING CRAFT

In the *M.M.* for January 1951, p. 82, Mr Basil Greenhill commented on the former British ketch and cutter-rigged smacks listed in *Danmarks Skibsliste* for 1950. A number of British-built smacks are also owned in Sweden. The official *Sveriges Skeppslista* for 1951, published in Stockholm, includes thirteen wooden smacks in its 'Fishing Vessels' section; of these, three were built at Brixham, three at Grimsby, two at Rye, two at Lowestoft, and one each at Bideford, Porthleven, and Burton (Burton Stather?). The oldest of these is the *Bergit* built at Grimsby in 1876, although the date of building of the *Östervåg* ex-*Gratitude*[1] is not stated. In the section devoted to auxiliary sailing vessels (Segelfartyg med hjälpmaskin), a further forty-seven vessels are included, most of which appear to be still used for fishing, but may also include some fish-carriers. In this section Grimsby is represented by ten names and Rye by nine, the remainder being made up of vessels from Brixham, Galmpton, Lowestoft, Hull and other ports. The oldest vessel here is the *Sonny* ex-*Energy*, built at Lerwick in 1872. One vessel, the *Minnie*, built at Lowestoft in 1896, is included in the 'Steamers and Motorships' section. In many instances, the original British owners can be traced, as, for example, in the case of the *Protector*, built on Cobholm Island in 1881. She is listed in the *Mercantile Navy List* for 1885 as a dandy registered at Yarmouth, and owned by J. R. Bass, Jun., of Gorleston. In 1951 she was owned by Karl Sigurd Sjödin and her home port was Kungälv. The majority of these vessels in the *Sveriges Skeppslista* were built before 1900 and it seems that most passed to Swedish owners before 1914. In the same list are a few former French vessels. PHILIP KERSHAW

[1] The *Mercantile Navy List*, 1907, gives a *Gratitude* built at Porthleven in 1903, and owned in Lowestoft.

THE RIG OF MEDIEVAL WARSHIPS

I must enter a strong protest over the way in which Mr R. H. Dolley[1] has implied in a recent article that the Ravenna mosaics settle in his favour the argument we have been having in this *Journal* over medieval warships.[2] In making this reply I intend to stick purely to the facts, and show how Mr Dolley has himself provided most of the facts that prove that he is wrong both in

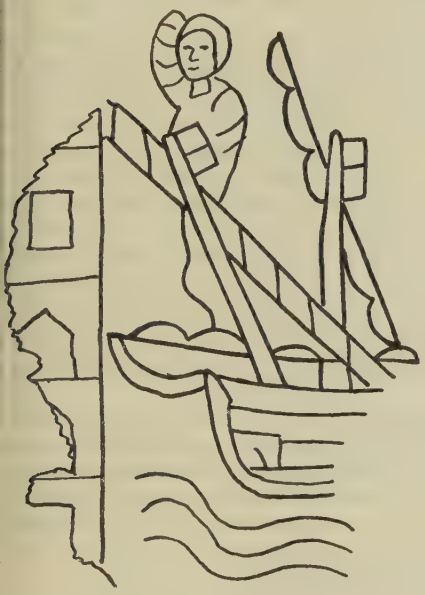
[1] R. H. Dolley, *M.M.*, November 1952. I have appended a sketch of the two mosaics numbered the same as Mr Dolley's plates.

[2] Dolley, *M.M.*, January 1949 and April 1950; and R. LeB. Bowen, Jr., *M.M.*, January 1950.

(1) his conclusion that the Ravenna mosaics have any bearing on the original discussion, and (2) his contention that the ships of Leon of Tripolis were lateen-rigged in the style of late Mediterranean galleys.

First, let us examine the Ravenna mosaics. Mr Dolley relates that 'it is a medium that of its very nature precludes the depiction of superfluous detail', and this seems to be particularly true in the case at hand. There are so few lines on the mosaics that there can be no doubt in anyone's mind as to what was intended so far as the rigging is concerned.

In Pl. 1 (*b*)[1] we see a ship apparently under way with the mainsail hoisted and the mizzen furled.[2] The furled mizzen is quite clearly shown, and is similar to furled sails seen on Arab and Egyptian dhows to-day, secured lightly in stops, and released by a tug on the sheet. Fastened to the tack of the mainsail in Pl. 1 (*b*) is the tack purchase, consisting of two lines which are also as clearly depicted as could be desired.



1 *a*

1 *b*

In Pl. 1 (*a*) we see a ship attacking a tower. Here the mizzen is furled on the standing yard just as in Pl. 1 (*b*). In referring to this mosaic, Mr Dolley states that 'we find a Frankish knight climbing up the reversed yard of his "nef" but the mainsail[3] is shown furled.' Certainly Mr Dolley could not have been serious in suggesting that the Frank is climbing up the main yard, for the main yard with the sail furled on it is clearly to be seen on the deck. As a positive indication of this is the fact that the two ropes of the tack purchase are shown fastened to the fore end of the yard, just as in Pl. 1 (*b*). If this is not evidence enough alone, there is a main halyard shown hanging loosely from the top of the main mast down to the yard and furled sail. It is quite obvious that the Frank is standing on some sort of a scaling ladder, and that the vertical lines are rungs.

[1] R. H. Dolley, *M.M.*, November 1952.

[2] Mr Dolley has preferred to call the forward mast the 'foremast' and the after mast the 'main mast.' However, since the forward mast is definitely shown to be higher in both of the representations, I shall call the forward mast the 'main mast' and the after mast the 'mizzen mast', a terminology which is accepted for present day Arab dhows at any rate.

[3] By main sail here he refers to what I am calling the mizzen.

Mr Dolley dates the mosaics as 1203/4. This is based mainly on two facts: (1) that the three ships shown in the mosaics are of the 'nef' type, while in 1095/6 the majority of the ships of the Crusaders were of the galley type; and (2) that history relates that in 1203 and 1204 alike the Venetians and Normans overcame the seaward defences of the 'City Defended by God' by swarming up the reversed lateen yards of their ships, and that therefore the historians 'receive striking confirmation from the mosaics'.

Since the main yard is shown quite clearly to be lying on the forward deck, and incidentally not reversed, the mosaics do not corroborate the historians. To state the problem that now remains in Mr Dolley's own words: 'The fact that an armed Frank strikes a hostile pose cannot of itself establish that the subject was the Latin conquest; it is well known that Alexios I had his difficulties with the leaders of the First Crusade and notably with the Italo-Norman heirs of Guiscard.' Thus we must definitely have more evidence than that presented by Mr Dolley before it can be accepted as a fact that the Fourth Crusade is depicted in the mosaics. At any rate, the mosaics can have no bearing on the ships of Leon of Tripolis.

Now to return for a moment to Mr Dolley's (*M.M.*, January 1949) original article on 'The Rig of Early Medieval Warships'. Mr Dolley (*M.M.*, April 1950) himself has said that the whole point of his original paper was that Leon of Tripolis's ships were lateen-rigged in the style of the later Mediterranean galleys, i.e. with two masts, the foremast being stepped as far forward as possible. The main point of my criticism (*M.M.*, January 1950) of Mr Dolley's article was that I did not think that the text of Ionnes Kameniates gave enough details to warrant this statement.

When Mr Dolley states that Leon's ships were in the style of later galleys, we must assume that he means exactly what he says. Such differences as we are looking for could be but a matter of a few feet in the length of the mast, or the length of yard, or the point where the mast was stepped, or the point at which the yard was hung. In my criticism of Mr Dolley's article I objected to the fact that in his sketch he showed one end of the yard considerably longer than the other, even though his translation stated that the yards were 'poles projecting from their middle.' Mr Dolley passes this off by comparing it with the English idiom 'middle of the road', and states that Kameniates did not expect to be taken literally.

While Kameniates may not have meant to have been taken literally on this statement, it seems that he was apparently absolutely precise in his description, since we have corroborative evidence to this effect. If Mr Dolley will look at a manuscript in the Bibliothèque Nationale[1] dated *c.* 880, he will see that in the earliest known representation of lateen sails the yards are hung from their exact *middle*. The ships that Mr Dolley is discussing are but a scant few decades after these illustrations. Thus, I am going to insist that, until Mr Dolley can produce evidence to the contrary, we must assume that the lateen yards of A D. 900 were hung from their exact centre.

That the lateen sails of A.D. 1200 were different from those of three centuries before, is indicated by the fact that, in recounting the fall of Constantinople, historians explicitly stated that the conquerors swarmed up the *reversed* lateen yards of the ships. Thus if the yards were reversed, it quite obviously meant that the after end of the yard was longer. This was a characteristic of later Mediterranean sails, but it still has to be proved that this change took place before A.D. 900; Kameniates's text certainly does not give any justification for this assumption. In assuming that it does, Mr Dolley asks us to accept his estimates of the following: height of the city walls, length of vessel, length of the yard, length of the mast, distance the mast was stepped from bows, length of steering oars, distance from quayside to city walls. An error of several feet in *any* of these disproves Mr Dolley's claim.

There were very definitely two distinct types of mast orientation in ships in the Mediterranean. One probably owes its origin to the Roman galley, and developed into the later style lateen-rigged galley: in this type the after mast was the main-mast and the forward mast was secondary. The other is very probably of Arab origin: here the forward mast was the main-mast and was raked strongly forward, and the mizzen mast was smaller. These latter are the type which survived in many places into recent times, and are indisputably the type shown in the Ravenna mosaics.

[1] MS. grec. 510, fo. 3, fo. 376 v. previously illustrated and discussed by H. H. Brindley, *M.M.*, vol. XII (1926), p. 13.

The feat of Leon of Tripolis would have been perfectly plausible with the type of ships shown in the Ravenna mosaics, without making any assumptions as to radical changes in rig. It is certainly important to note that the fleet in question was an Arab fleet. That the Arabs had access to such a design of two masts at an early date is shown in the eighth or ninth century Boro Budur sculptures. All two-masted ships in the Mediterranean before Islamic times show the forward mast smaller and raked forward like a modified *artemon*.

The whole question of whether or not galleys of A.D. 900 were like those of later date, hinges on whether or not the lateen sail was hung from the middle as early as that; I will leave it to readers to decide what the facts show. RICHARD LEBARON BOWEN, JR

THE DATING OF THE DUKE OF YORK'S SUPPLEMENTARY ORDERS, 1672

Further to the Notes on this subject in the *M.M.* for August 1952 and February 1953, Jordan's Journal, quoted in Dr Gumble's *Life of Monck*, p. 427, reads: 'July 18. The Wind Westerly, the Generals gave Additional Instructions (concluded by the Council) that when (it should please God) we came to an Engagement with the Enemy, we should endeavour to keep the wind of them, not to begin the Battel till the Van of our Fleet should get up with theirs, and then the rest to fall in close in their Lines appointed, that the Enemy (which usually and might lay in an Half Moon) should not be able to tack upon us to gain the wind.'

The half-moon, like the 'crescent convexing to leeward' that Collingwood saw ahead of him at Trafalgar, was the result of bad station-keeping, *vide* de Guiche, but not a good thing to break into. When the Duke of Albemarle 'talks how he knows the way now to beat them', *vide* Pepys on 10 June, he may well have had these Additional Instructions in his mind; but as his successors were to find, it was not the whole answer.

Albemarle may well have grasped the fact that passing on opposite tacks at half cannon-shot or more, and firing at an overall rate of about one round per gun per hour, was not the way to win decisively. The new Instructions were a step in the right direction. There is some support for this view in de Guiche's comment on the St James's Day Fight, which unfortunately for us, he did not see: 'The English let the whole Dutch Fleet pass without reply; as soon as they had tacked, they closed to musket-shot: it is thus that one should fight; the rest is nothing but noise: barring accidents, an engagement at full gun range is a harmless spectacle not deserving the name of danger' (p. 276). A. H. TAYLOR

ROYAL STANDARDS IN MOURNING

The hauling down of Queen Mary's standard when the obituary notice was posted, instead of half-masting it until the time of the funeral, reawakened interest in the surprising new etiquette established on the death of King George VI.

On 11 February 1952 a London newspaper forecast textually that: 'From to-night in addition to the Royal Standard on Clarence House, which denotes that the Queen is in residence, a second Royal Standard will fly from Westminster Hall. This second Royal Standard, for King George, will replace the Union Jack flying from Victoria Tower as soon as the King's coffin arrives at Westminster Hall. It will remain at half-mast day and night until the day of the funeral.'

This prediction based on precedent was well founded; but the expected procedure did not take place and did not appear to evoke comment when it was seen in fact that this second standard was not flown anywhere. Why was custom not followed?

Correspondence with high places reveals that the attitude adopted nowadays is that since the Crown is never extinct the Royal Standard should never be lowered; but is there justification for this change of view? As things have stood from time immemorial the only way of rendering homage and signifying grief for the dead monarch by means of a flag in the sense of a personal flag is by flying the Royal Standard at half-mast, notwithstanding its display at the staff-head elsewhere in token of the presence of the new Sovereign.

There is abundant evidence that on the deaths of Queen Victoria, King Edward VII and King George V the standard was flown on each occasion at half-mast and masthead simultaneously. In fact in 1910 the standard was half-masted in at least one other place far remote from the body, namely, at the King's racing stables at Newmarket 'by special permission', the authority for such permission not being stated.

It is contended by Garter, Principal King of Arms, that it is the flag of the living that is dipped as a salute or mark of respect to the dead since the dead cannot fly flags, half-masted or otherwise. The flag of the living *is* lowered in this way but the dead may have flags half-masted for them by others if they, the deceased, were to possess some sort of personal emblem, whether in the form of a banner-of-arms or not. An admiral's flag for instance, may be treated thus. Therefore, if the established practice, claimed to be based on false precedent, is to break down and the Royal Standard is to be regarded no longer as custom ordained previously, whether by regulation or not, then the lack of a banner-of arms or standard personal to the Sovereign, during the reign, should be remedied. Now, the Royal Standard has become the emblem of the Crown in perpetuity and not that of the crowned head of the moment. If this can be argued successfully, which would seem to be the case, then a new precedent should be created and the void filled. As Princess Elizabeth, her Majesty the Queen possessed a personal standard in the same way as did her father, uncle, grandfather and great-grandfather before each became king. Admittedly it was characteristic of the Royal Standard but, being differenced, was a different flag nevertheless, which ceased to exist on her ascent to the Throne. That banner will never be used again or become the property of anyone else; yet any other persons possessing personal flags could expect to have the honour paid to them on departing this life of having their flags lowered to half-mast until the day of the funeral. Thus in future seemingly, the subjects of the Crown are to be more favoured than their royal superiors.

Notwithstanding this new view of Authority with regard to the Royal Standard it was thought that there would be no alteration in the treatment of any other royal standard. Queen Alexandra's banner was half-masted in November 1925 and the expectation was that Queen Mary's personal standard would have been handled similarly, especially seeing that no question of succession was involved. But no; it was struck, *permanently*.

If it is wrong to half-mast the Royal Standard (or any other royal standard), is it correct to use such a banner as a pall as has been done at the funerals of every Sovereign since and including that of Queen Victoria; and at those of Queen Alexandra and Queen Mary? Such treatment of the flag is symbolical of its extinction, yet it continues to survive in the case of the Royal Standard, which is an apparent contradiction.

If the use of a royal standard as a pall is considered to be good heraldic practice then, to be consistent there should be no objection to the half-masting of such a banner. Does royalty lose all rights to armorial bearings immediately on death whereas the right of other dead holders of arms that they enjoyed during life appears to be maintained? Another contradiction and inconsistency seems to be the practice of placing the royal arms on memorials up and down the country to departed sovereigns. Are these wrongful infringements of the rights of the monarch who was reigning when the memorials were erected?

Furthermore, if the intention is to regulate and tighten-up procedure relating to the Royal Standard, which must not be displayed unless the King or Queen actually is in the vicinity, how is it explained that the flying and saluting of it by all the Services at birthday parades in honour of the Sovereign was re-introduced? Provision for this observance has been given official sanction, or actually commanded for some years now, in the three King's (now Queen's) Regulations. Both Edward VII and George V are credited with having done much to clean up the irregular use of the Royal Standard but neither of them appears to have abolished the practice of half-masting it on the death of the Sovereign. Who is responsible for these changes and what will be done to remedy matters? The tangle is getting more complicated and should be unravelled before it gets any worse through further confused thoughts on the subject. The inconsistencies should be removed, the main conclusions to be drawn being obvious.

A. PEACOCK

THE FIGHTING SHIP FROM 1860 TO 1890

I am not convinced by Dr Oscar Parkes's statement (*M.M.* February 1953) about the first steel warship. I am inclined to think that steel was adopted gradually, so far as I can ascertain the facts, but that in the 1870's French technique in steel construction was somewhat ahead of anyone else's, and that the work of M. de Bussy (who designed the *Redoutable*) and his colleague M. Barba, aroused particular interest in Britain. It is true that the *Redoutable* was not entirely of steel, but the use of steel for frames, bulkheads, keel, etc., was at the time revolutionary. The *Amiral Duperré*, laid down in December 1876, was entirely of steel except for the plating and rivets. The *Formidable* and *Amiral Baudin*, laid down in 1883 and designed by M. Huin, were all of steel except the rivets, and the *Brennus*, launched in 1891, was altogether of steel. The *Edinburgh* did not enter into service, I believe, till 1886. Meanwhile, as early as the spring of 1877, the first torpedo-boat built in France, *No. 1*, built by Claparède, came into service, and she was of steel except for keel, stem and stern-post, while T.B.s *Nos. 20* and *21*, ordered in July 1877 from Normand of Le Havre, were all-steel.

I believe that the first steel merchant vessel to cross the Atlantic was the Allan liner *Buenos Ayrean* built in 1879 at that great pioneer yard, Denny's of Dumbarton.

The Chilean navy of 1891 had had more battle experience than any of its contemporaries. It was not so big as those listed by Dr Oscar Parkes, but it contained a number of important units of several classes.

J. DE C. I.

QUERIES

17. JETSAM OF A SIGNAL BOOK. Sometime during the decade preceding the Old War (1914–18) a signal rating on the China station, being fed-up or disgruntled, threw overboard a signal book, with the idea of getting his seniors into trouble. The object in question was the Flotilla Signal Book, a thick octavo volume containing a concentration of the various quarto signal books then in circulation. The book was intended for destroyers and small craft, and not usually referred to in a big ship unless for instructional purposes. The culprit had removed the business part of the volume from its lead-weighted cover, and substituted the body of Miss Agnes Weston's book, *My Life among the Bluejackets*, and by means of red, yellow and blue chalks, had coloured the edges of the pages in imitation of the parts of the jettisoned book. (The colours were for convenience in finding the different sections.) As nobody took the trouble to look inside the 'Flotilla Signal Book' the loss was not at once detected. The culprit was somewhat frustrated in his design because the book floated and was salved by an acquisitive sampan lady. It was afterwards found lying in the stern-sheets to dry, by some naval passenger in the sampan, so it was not lost, but only gone a-missing.

Needless to say there was a court-martial, or at any rate a court of enquiry, and the senior signal ratings were in trouble for lack of supervision, and the various officers-of-the-watch of the ship were likewise in trouble for logging 'S.B.C.' ('Signal Books Correct'), at the end of each watch since the crime, while the signal books in fact were not correct at all. Although I am practically certain that this is not just an apochryphal story, I have been unable to find any reference in the court-martial returns, or in the various naval journals of the period such as the *Naval and Military Gazette* (or 'Dockyard Liar'). Can any member who was serving China-side during this period, shed any light on the incident? I believe it was at Hongkong from the sampan connexion. Miss Weston's book was published in 1909, so if that part of the story is true, it narrows down the relevant years to five. E. WADE-KILLICK

18. HOISTING THE COLOURS. Has it ever been the custom in H.M. ships for the signal ratings hoisting the ensign to remove their head gear? This was done, not for fear of getting their caps knocked off by the flag, but out of respect because they were unable to salute or stand to attention. I have certainly seen it done, but unfortunately cannot specify what ship, station or manning port. I am told by others that it was never done. HARRY HUNTER, JNR.

19. ARMADA WRECK. Can anyone please tell me what became of the Armada wreck, reputedly one of the ships carrying pay chests, for which salvage operations were begun off northern Scotland some three years ago? I was out of England at the time and do not remember where the wreck was presumed to lie, but I recall that it was supposed to have sunk into the sand, and that naval dredgers had brought up some timbers. Though the excavators were mainly interested in treasure, I should like to know whether in fact any naval relics of historical interest were brought up.
M. WITT

20. ARMADA PAYMENTS. Almost every 'Armada galleon' is credited with having carried 'treasure', and numerous treasure hunters in fact and fiction have sought after 'Spanish gold' in sunken Armada wrecks along our shores. Does anyone know which ships, and how many did in fact carry pay chests? Also what the pay arrangements were, what the total costs of the expedition amounted to, and how much treasure was really lost at sea. M. WITT

21. 'RESTORER OF NAVIGATION.' Among the many memorials to men of the sea in the church and churchyard of Leigh in Essex, now swallowed by Southend, is one in the church, which is chiefly remarkable for its inscription. Below a bust are the following words:

To y^e^ Memory of y^e^ Right Worthy and Wor^le^
Robert Salmon Esquire
That great instrument of God's glory and ye commemorable good, y^e^ restorer of Navigation almost lost 1614. M^r^ of y^e^ Trinity House 1617 & the glory of it 24 yeares, chosen Sheriff of London 1640 whose Solid Judgement, Acute Will, Uprightness to all, true piety to God, require admiration and imitation. Hee died to y^e^ loss of all but his great comfort, June 18th 1641 in his 74 Yeare; and was interred with his ancestors of above 300 years continuance in y^e^ grave of his Father in this Chancell, where he expecteth a joyfull Resurrection.

Apart from the reference to his ancestry, which is in a very unusual form, especially at that period, the description of Robert Salmon as the 'restorer of Navigation almost lost 1614' is noteworthy and at first sight appears to be quite inexplicable, since there seems to be no record of any event affecting 'the art of navigation', as the word is now used, in the year 1614, except that, according to the *Encyclopaedia Britannica*, Napier published in that year his *Canon Mirificus*, which some ten years later led to the use of logarithms as an aid to navigation.

Captain Salmon belonged to a prominent family of shipbuilders which was settled at Leigh, as the monument records, at least as early as the fourteenth century onwards and so continued until the Great Rebellion. The members continually intermarried with other seafaring and shipbuilding families and all were more or less prosperous, but for the most part of little interest outside their own profession. One member, however, Peter Salmon, son of this same Robert, was an exception, thanks no doubt to the fact that his mother, Martha Andrewes, was a sister of Lancelot the well-known Bishop of Winchester, who also came from an Essex mercantile family, settled at Horndon-on-the-Hill. Their father, Thomas, was Master of Trinity House. Peter, who was educated at Eton and King's College, Cambridge, took his degree of doctor of medicine at Padua, was a F.R.C.P., and physician to Charles I. Even he, however, married for his first wife a member of another seafaring family of Leigh in the person of Joanna Goodlad; for his second wife he married Joan daughter of Gilbert Morewood, a merchant of London, and one of his daughters by her, Frances, married James Master, of a Kentish family and became the ancestress of the Byngs, Viscounts Torrington.

Captain Robert Salmon, brother of Peter, became, like his father, Master of Trinity House and was also a director of the East India Company; his first wife was Joan Vassall of the well-known family with many seafaring connexions, and his second was Elizabeth daughter of John Duleing, alderman and brewer of Rochester. Their child, another Captain Robert (of the 8th generation), was the last to be described as 'Captain' and 'of Leigh', since he as a royalist compounded for his estates and sold the Leigh property. Although his son James was also described as a mariner and was a Younger Brother of Trinity House, he was succeeded by three generations of brewers.

To revert to the 'restorer of navigation'; enquiries from naval sources brought no solution of the puzzle, but my friend Mr Edmund Vale reminds me that by the end of the eighteenth century the term 'navigation' became applied to the construction and upkeep of canals and that the word 'navvy' continued in use to describe the labourers whose activities were transferred to the construction of the railways which succeeded the waterways.

Leigh, the site of the Salmon family's shipbuilding establishment, is now separated from the open water at low tide by a wide stretch of mud, which must have been a great obstacle to the launching and berthing of ships and it is tempting to guess that the event which is commemorated by Robert Salmon's inscription was his invention, or re-discovery, of some device for keeping clear a channel from his yards through the mud to the open water.

Can any reader confirm this theory and if so suggest the method adopted?

Could a canal have been scoured by water pent up in a dock at high water?

I have no knowledge of the physical conditions in the Thames estuary at that time, e.g. whether mud is known to have accumulated at the beginning of the seventeenth century and before the river became London's sewer.

W. J. HEMP

ANSWERS

3. (1929.) CUTTER-BRIG. No answer yet seems to have been supplied to this Query, which asked what exactly was a cutter-brig. Smyth's *Word-book* defines it in effect as a ketch with square topsails; but there is no other authority for this usage. Greenwood's *Sailor's Sea-book* (1850) says under *Brig or Brigantine*: 'In the Royal Navy, when cutter-built vessels are thus rigged, they are called *Cutter Brigs*.'

The *N.E.D.* has a reference to the cutter-built brig *L'Aguille* in 1803, and the fifth volume of *Naval Documents, Quasi-war with France*, p. 153, mentions another French vessel, 'a fine cutter-built brig', in 1800. It appears clear that a cutter-brig was a cutter-built vessel, brig-rigged.

The problem thus becomes what exactly was meant by cutter-built? From the date and nationality of the known examples, it appears to mean clinker-built. Such a hull rigged as a cutter or three-masted lugger would attract no special notice in 1800, but rigged as a brig she needed to be distinguished from the ordinary carvel-built type.

Both luggers and cutters about 1800 had running bowsprits. It would be interesting to know if cutter-brigs were rigged in this way also. J. L.

3. (1952). CRUISER. The word 'cruizer' occurs in *Matters of Fact relating to the Navy, truely stated*, 1705, a copy of which is in the National Maritime Museum. It contains a table of the disposition of ships, many of which were employed 'cruising', followed by 'A Monthly Abstract of the Convoys and Cruizers.' W. F. MAY

7. (1952.) ADMIRAL LAWSON. The attribution to John Lawson of the advice to the Navy to concentrate on its duty of preventing foreigners from fooling us is I believe to be found in the *Memorials of Sir William Penn*. It is to be feared the attribution was accepted for no better reason than that I thought Blake being the more famous, was the more likely to have been given undue credit, in the same way as the learned Dr Spooner was said to have been the author of a hundred and one spoonerisms, whereas at his death we were told he had the right to but one. The opinions on the matter expressed in the *M.M.*, contradictory as they are: Dr de Courcy Ireland thinking the manner unlike Blake, the Rev. J. R. Powell considering it like, and Dr Anderson reasoning why Lawson was unlikely to have given such advice: leave me in a muddled state of mind. I would agree with Dr de Courcy Ireland that it does not sound like Blake, a belief based on a reading of a fair number of letters; but then Mr Powell will have read many more than I have read and should be the better informed. Dr Anderson's evidence that Lawson himself was interfering in State affairs and therefore could not well tell others to keep clear of them, would be conclusive if it were not that it has been noted that those who hold strong political views (and Lawson was a Leveller), imagine they are pronouncing fundamental truths; it is always the other fellow who is talking party politics. For myself I think it best to run away cowardly and say that I believe that neither of the admirals said it, but that it was one of the odd hundred things which some scribe thought one of the admirals ought to have said. GREGORY ROBINSON

22. (1952.) SCURVY. Vitamin C is the antiscorbutic vitamin and has been identified as ascorbic acid, found in most fresh foods especially fruits and vegetables, but it varies in amount from species to species.

Potatoes are a poor source of vitamin C, but an orange a day provides a fairly adequate supply of it. It is interesting to note that freshly picked parsley, broccoli and kale contain more vitamin C than citrus fruits Ascorbic acid is destroyed when dried or heated.

The yarn mentioned by Commander S. H. S. Moxly concerning the absence of antiscorbutic activity in lime juice is unfounded since limes contain vitamin C.

One point that struck me was the use of 'chemical salts of lemon' mentioned in his notes on cures and preventatives. The substance mentioned is a highly poisonous salt of oxalic acid. I am

sure that the chemical salts of lemon mentioned in the Sergison Papers is not the same substance which is called by the same name nowadays.

The use of citric acid by Dr John Haines is also interesting. The normal source of his citric acid would be lemons and it is quite probably that ascorbic acid was extracted at the same time. The citric acid would thus have antiscorbutic action. G. H. FOXLEY

23. (1952.) Inferior ships. The tradition that the British builders produced inferior ships over a long period appears to be firmly fixed and widely accepted, both in Britain and in America. As Dr Anderson has remarked, the evidence supporting the tradition is actually in the matter of the relative size of vessel in each of the rates. This was particularly marked in the opening years of the French War of 1745 when the Royal Navy found the 24-gun ships inferior to the French frigates, as well as some of the other rates. The 24-gun ships are good examples for illustrating the matter; the new 24's of 1745 were 106 ft. on the lower-deck and were rather high-sided craft of the ship-galley class with a rowing deck below the gundeck. A French frigate carrying 28 guns was 113 ft. on the lower-deck. The greater length not only allowed the additional guns to be carried but was a factor in sailing speed.

I have repeatedly attempted to draw attention to the fact that British builders did not habitually produce inferior vessels in the sailing-ship period. In discussing the 'first clipper' in these pages some years ago I referred to the splendid cutters, and particularly to those of the late eighteenth century. In dealing with the American men-of-war in *The History of the American Sailing Navy* I also gave much space to the question and stated my opinion that there was no period between 1745 and 1815 in which the Royal Navy did not possess very superior ships.

A prolonged study of the Admiralty Draughts now in The National Maritime Museum has satisfied me, at least, that the British builders could and did produce some extraordinarily fine vessels and that these were not exceptional nationally. Some of the early 24's were unquestionably fine designs for the size of their rate in the various Establishments. The *Lyme*, built in 1739/40 on the Thames, for example, was certainly a forerunner of our Baltimore clipper model and the *Lyme* exhibits every feature, in moderation, of the hull-form we used about 40 years later.

About 1745–50 there was a most interesting attempt to produce what we now call a 'simplified hull-form' in a brigantine in which the body-plan was largely formed of straight lines in every section. Some of this class were very fine models and one draught indicates that an 'experimental squadron' existed somewhere around 1729 in this class; this has never appeared in any history of naval architecture I think and it would be therefore an interesting subject to explore.

The cutters certainly show a most superior class of hull-forms which were capable of high speed. Those built about 1778 were of very great size for one-masted craft and were in every respect as interesting as our clipper schooners as examples of designs for speed.

The experimental vessels of Bentham using very cut-away ends, outside ballast, drop-keels and light construction were outstanding developments at the end of the eighteenth century. The *Transit* and the experimental craft of heavy ballasting and narrow beam designed by Peake are similar craft in the opening years of the nineteenth century. There was hardly a 20 year period between 1750 and 1850, apparently, in which there were not some experimental craft turned out, or at least exceptional vessels were examined and their lines recorded.

The repeated failures of the Admiralty to build large vessels for a given rating was not a matter of the constructor's responsibility but of administration just as the inferior ships of the American Navy of 1825–30 were administration errors.

I have stated that the evidence exhibited in the Admiralty Draughts strongly suggests that the tradition of 'inferior ships' was used to excuse the failures of incompetent officers and I still think this may well be the case.

The tradition of Britain's 'inferior ships' is usually set forth in sweeping generalities. If one attempts to pin the matter down to individual vessels, however, there is difficulty in establishing any large number of mistakes in design, poor construction or continued use of inferior models. Even the much-criticized 44-gun ships on two decks of the middle of the eighteenth century were *not* inferior models but just too short for their armament, administration errors rather than

designer's fault. Some ships were produced, it is true, that would not carry their guns properly; can anyone name a navy in which such mistakes did not occur in the sail period or, indeed, much later?

Fault is often found that the Admiralty 'copied' French, American or other foreign ships. I think they would have been utter fools not to have done so when the opportunity offered. No person or group could possibly have sole ownership of good design ideas and so ships appeared from time to time that were exceptional and so deserved reproduction. The Admiralty had brains enough to recognize this. Unfortunately, there were instances when the size of the original example was considered too great and the copies were on reduced scales with sad results. But this was true in other navies when 'copying' one of their own class. As an example, the ship sloops of 1838 in the American Navy; poor copies of the 1813 class in the same Navy through reduction in length. As I see the matter, the trouble was not incompetence among British designers but rather was the faults of a bureaucracy administering the Navy just as was the case at times with the American Navy and, I dare say, all navies of any consequence. H. I. CHAPELLE

'The *Rurik* showed up badly when it came to the test of action'. Did she? Obsolescent by standards of 1904; twelve years old; the slowest ship in her squadron. Left unsupported in the opening phase of the action, she was hammered by modern armoured cruisers from 5.23 a.m. till about 8.20 a.m. at which time she was still capable of 8 to 12 knots and had some guns in action. Finally from 8.45 a.m. till 10.5 a.m. she was subjected to some 600 rounds of 6-in. from the *Naniwa* and *Takachiho* before her last two guns were disabled and she was sunk by opening her Kingston valves to prevent falling into enemy hands.

Her resistance enabled the *Rossia* and *Gromoboi* to escape destruction.

Not a bad record for an out-dated ship. A. L. F.

I feel some diffidence in disagreeing with so eminent an authority as Dr R. C. Anderson; but that said, ought we not on the facts and in disregard of our *amour propre*, to admit that generally speaking our men-of-war *have* been inferior to those of our enemies?

My history of the sailing era is somewhat rusty; but my recollection is that more than one naval historian has criticized our ships not only because they were smaller (and therefore more cramped and difficult to fight) than their foreign counterparts, but also because they were inferior sailers and much worse designed and constructed. I have always understood that French and Spanish prizes taken into our Service were among the finest ships we had, so that we even went to the length of copying them.

Coming down to more modern times, it has always seemed to me that, by and large, German ships in the War of 1914–18 made a markedly better showing than did ours. Contrast the sorry performance at Jutland of our battle-cruisers with the tremendous battering which their German 'opposite numbers' successfully withstood. I am not prepared to express an opinion on our ships in the last war, as for one thing, novel and complicating factors, such as Treaty limitations honoured by ourselves and disregarded by our enemies, complicate the issue. But I admit to a suspicion that our modern designs left something to be desired.

May it not be that if some other navies copied our ships during the seventy years preceding the Old War, it was because we enjoyed the prestige of having the greatest navy in the world (and were to some extent basking in the reflected glory of our past)? True, the ships of the Japanese fleet designed and built by the British, seemed to come well out of the Russo-Japanese war; but then the opposing side was almost startlingly inefficient. And it must be conceded that the most (then) modern Russian ships of the *Knyaz Suvoroff* class, which differed markedly from contemporary British designs, did seem capable of taking teriffic punishment. The Germans most certainly did not copy our designs in the years prior to 1914, with results we all know. And it seems that after 1918, when other naval Powers were able to assess the fighting qualities of our ships on actual evidence, *nobody* (the French perhaps excepted) followed our ideas. And looking at photographs of some of our latest ships almost makes me suspect a latent tendency in ourselves to copy the Americans! W. M. PHIPPS HORNBY

REVIEWS

Captain Marryat: A Rediscovery. By Oliver Warner. Constable, London. 1953. Price 20s.

What a very pleasant book this is; Mr Oliver Warner seems to have caught, in his manner of writing, much of the freshness and the love of life that his subject had apparently for most of his existence and he is obviously very much in sympathy with him. There was a lot of the 'boy' left in Marryat right up to the end and he must have been a very likeable character, judging by what Mr Warner has written.

Marryat not only appears to have modelled himself on Lord Cochrane, his first captain, but would also appear to have been like him by nature; both men were natural rebels, outspoken and unafraid to state their convictions even if they would become unpopular in doing so, very courageous and neither looked to the past but invariably to the future and both were of an inventive turn of mind.

In spite of his candour, which possibly helped to make him not liked in high places, Marryat did rise as Mr Warner says, to the top of his professional tree by becoming a captain in the Royal Navy; further promotion was merely a question of time; if he had stayed on in the Service he would certainly have died an admiral. That was one phase of his life; then came peace, and although Marryat had a good share of what employment was going and did well in it, he probably felt that a steady job ashore would be better, especially as he had a growing family now; so like many a naval officer both before and after him, he came ashore for good and took up completely different work from that to which he had been accustomed; he became an author and a very successful one.

He was the friend of many of the great literary and artistic people of his day such as Dickens, Stanfield and Landseer, but he moved in this circle of his own right; he was a well-known author himself and could be intimate with the great people of his new profession as being their equal in every way.

As is pointed out, his early life in the Navy under Cochrane gave him plenty of scope on which to draw for episodes in his stories; and as novels about the sea by a distinguished naval officer had never been written before, Marryat was starting out on a particularly good wicket. But that was by no means the chief reason for his success; the public of his day thoroughly liked and enjoyed his books for their own sake, as a very large number of people do to-day. Marryat started out by writing for fun and then, wanting money, settled down in earnest to become an author and in a short while became a very successful one.

As Mr Warner points out, Marryat is no stylist and some of his books show signs of hurried writing but they nearly all entertain, which was what their creator meant them to do. His stories are not autobiographical as some people maintain, though most of the incidents related are taken from some personal experience. His books, though not strictly historical, give an excellent picture of the times ashore and at sea in both the Royal Navy and the Merchant Service.

Marryat may not be as much read as he once was but Mr Warner suggests a return of popularity through the films for which purpose he thinks Marryat's books would be admirable, a statement with which many people will agree; but it may also be said that reading this book will help to that end as much as anything. A very interesting and entertaining work, which closes with a Marryat Bibliography and a good index. There are also nine illustrations including two very pleasing portraits of Marryat.

H. O. H.

The Map Maker's Art. By Edward Lynam, D.Litt., M.R.I.A., F.S.A. The Batchworth Press. Price, 21s.

It is a fairly safe statement to make that most people take some interest in maps, and an even safer one to say that a very large number are exceedingly interested in cartography; many of these latter will browse over a map for hours and study and read it as they would a book. To this second

class *The Map Maker's Art* will be a complete joy; and the others, if they will but read it, will probably become as enthusiastic map readers and browsers as those already under the spell.

This volume is a collection of seven essays written and published at various times by the late Dr Edward Lynam, who was Superintendent of the Map Room of the British Museum; this fact alone ensures that this is not a book to be lightly skimmed through. But the reader once having started will find him or herself held by the fascination of the subject and the easy pleasant style of the author. To some, perhaps, it might seem that this book could not be anything but dull except to the enthusiast, but such is the writer's skill that one's interest is held and excited from the start of the first essay to the end of the last. It may surprise some people to learn that maps began so early in our history and also what works of art they were, according to the standards of their day; primarily they were drawings and sketches of the country or coast which the map maker was delineating, and this was done, of course, because in those early days there were very few scientific instruments capable of making a survey at all, let alone an accurate one, and it was only as instruments improved that maps became better and more like those wonderfully accurate diagrams that enable the modern traveller to find his way all over the country without ever going badly astray.

The confiscation of the monastries by Henry VIII gave the first great impetus in this country to the making of maps. New estates were formed as royal favourites and servants received land taken from the monks; these new landowners wanted to know exactly what they had, and, in addition, what sort of land, pasture, arable or woodland, etc.; they, therefore, commissioned their agents to map out their estates and thus created a new importance to a craft that had been beautifully but not accurately done hitherto.

Down to 1770, churches and country houses were drawn in elevation, but at the end of the century the Ordnance Survey reduced all buildings of every kind to plan, an eminently sensible and practical idea but one which robbed the map of a great deal of its interest and beauty. It is from small details such as this that the date of a map can be learnt and it is by recording facts such as this that this book will help the beginner in cartography and teach him what to look for when studying an old map.

One of the most interesting of the essays is that dealing with the career and work of Christopher Saxton, who might be considered the founder of Cartographical Science in this country. But all seven chapters are really equally good and everyone with the least interest in maps should get and read this book, which is well got up and full of the most interesting reproductions of old plans and surveys. What a pity, though, that the times in which we live do not allow of these same plans being reproduced in their original colours, the cost of which would be prohibitive.

There is a very useful list of books and articles by Dr Lynam at the end of this volume and a good index.

H. O. H.

The *Uganda* in Action. By Major F. V. Longstaff. Pamphlet reprinted from the *Daily Colonist*, Sunday Magazine Section. Victoria, B.C.

It is one of the handicaps of to-day that we live in an atmosphere of so much suspicion and secrecy that the would-be historian is still denied access to the official documents and records of the last War. Nearly eight years have elapsed since the end of hostilities and we still have to rely on the personal reminiscences of naval officers and ratings for accounts of the doings of H.M. ships. For that reason this story is a welcome addition to our scanty knowledge.

The *Uganda* had her full share of excitement and rather more than her full share of ocean travel during the war years. For the first nine months of her life she served under the command of Captain W. G. Andrewes in the Home and Mediterranean Fleets, and during that time she steamed 46,236 miles, escorting convoys across the Bay of Biscay on nineteen occasions, travelling far into the Atlantic in search of enemy raiders, and carrying out numerous bombardments during the invasion of Sicily and the landing at Salerno. On 13 September 1943 she was hit by a 3000-pound bomb which killed one officer and fifteen ratings and put three of her four main engines out of action. Despite her injuries she accomplished the journey from Salerno to Charles-

on in South Carolina (where she was repaired) on her port foremost engine, an incredible feat which was commemorated by a brass plate affixed to the engine bearing the words, 'Well done, thou good and faithful servant'.

The *Uganda* was under repair in the United States for nearly a year, and during that time she was transferred to the Royal Canadian Navy, although at the request of the Uganda Government she retained her name. She was commissioned on Trafalgar Day, 1944, by Captain E. R. Mainguy, O.B.E., and a few days later she sailed for Halifax and thence to Newcastle-on-Tyne where she underwent a large refit. On the first day of 1945 she left Newcastle for the Far East to join the Fourth Cruiser Squandron of the British Pacific Fleet. For four months she took an active share in the reconquest of the islands held by the Japanese, but at the end of July 1945, rather a curious thing happened to her; she was ordered to proceed to Esquimalt, apparently in order that every one of her officers and men might sign a form of declaration stating whether they wished to continue on active service or to retire. Major Longstaff states that 'the tearing away of so many officers and ratings from active service was very distastful to most of them'.

The war ended a few days later and the *Uganda* settled down to the peace-time routine of a unit of the Royal Canadian Navy, which included a 'goodwill cruise' round South America and two training cruises in northern waters and Mexican waters respectively. During her passage round Cape Horn, we are told, she 'slowed down, hoisted awnings as sails, and one of the motor boats was launched and photographs were taken from it of the ship as rigged'. Major Longstaff does not explain the reason for this unusual exercise, but one is tempted to imagine that it must have been caused by her desire to pose for her photograph as a windjammer rounding the perilous Cape Horn.

On 1 August 1947 the ship was paid off into reserve at Esquimalt. A curious misprint tells us that on 14 April 1951, 'a letter arrived from Ottawa with the permission of His Majesty King George for the name to be cherished from *Uganda* to *Quebec*'. The change of name was duly solemnized nine months later when the *Quebec* was commissioned by Captain P. D. Budge, D.S.C.

After giving a brief account of the four ships which held the name *Quebec* previously, Major Longstaff finishes on a note of gloom. 'All life-long sailors', he says 'have a great superstitious aversion to the changing of the name of a ship in the middle of her active life. In the great days of sail many cases are known when a ship's name has been changed, and she has sailed away and has never been heard of since nor has any trace ever been found of her. This superstition is also shared by many of the senior Canadian naval officers to-day. It is certain that all officers and ratings who have had service in the *Uganda* will continue to think of the new *Quebec* as the old *Uganda*, of many happy memories and goodfellowship'.

W. P. TROTTER

Merchant Steam Vessels of the United States 1807–1868: The Lytle List. Compiled by William M. Lytle. Edited by Forrest R. Holdcamper. Publication No. 6, Steamship Historical Society of America, Mystic, Connecticut, U.S.A., 1952. Price $5.

This monumental work covers all documented American steam vessels, from Robert Fulton's famous *Clermont* of 1807, the first commercially successful steamer in all history, up to the year 1868, when the U.S. Government commenced to print the annual list of merchant ships. Its publication marks the achievement of a most elaborate piece of maritime historical research. The data for 'The Lytle List' was assembled by the late William M. Lytle; but on his death in 1944 it was still far from complete. His manuscript notes, files and cards were transferred to the U.S. National Archives, with a view to their ultimate publication.

This has been made possible by the devoted labours of Dr Forrest R. Holdcamper, of the National Archives, who has edited the list, checked all entries, and prepared it for publication with the assistance of Mr John E. Nolen, also of the National Archives, Mr C. Bradford Mitchell, Editor-in-Chief to the Steamship Historical Society of America, and Mr Alexander C. Brown, Chairman of their Publications Committee. The list has been put into alphabetical order, adequately

cross-referenced, and provided with footnotes. Custom House records not available to Mr Lytle have been checked, and many entries for small craft of 5 to 20 tons have been added.

The publication contains four sections, the main list of documented merchant steamships, and three other lists. These relate to: B, vessels lost; C, those converted to steam; and D, vessels mentioned in newspapers and other unofficial sources, but not in the Federal Government records. In the main list, of seven columns, the steamers are entered with their description (side paddle-wheel, stern wheel, or screw), name, official tons measurement, year of build, place of build, first home port, and year of removal from documentation. This handsome volume, of 307 pp., is bound in cloth. Its production will be a credit to all those who have laboured so devotedly, and to the liberal contributions of the many individuals and institutions who were determined that it should be published. H. P. SPRATT

Passenger Liners of the Western Ocean. By Commander (S.) C. R. Vernon Gibbs, R.N. Staples Press. Price 30*s*.

Not a great deal has been written in book form about the development of the Western Ocean liner. The work reviewed is primarily a reference book and the author claims that within certain limits he has included all passenger liners sailing from Britain and the northern continental ports to N. America. There are twenty-four chapters, each dealing with a company, or in some cases a group, preceded by a history of the company concerned.

The ships are grouped according to their companies and, with an ingenious system of signs and symbols which are described in the explanatory chapter, the various specifications, etc. are condensed into the smallest possible space. Most of the more important ships have been written up individually, and details such as fastest crossings, etc. noted.

The historical notes are brief, but of interest. One can picture the emigrant carriers of the 1860's and 1870's belonging to such companies as the National, Union, or State, pouring out their continental hordes into N. America in search of a new life. These and many other ventures succumbed before the end of the century, and their names are now forgotten. Competition was fierce and only the best survived. The Cunard and White Star Companies, with sufficient capital backing and efficient organization, held their own throughout, and are with us to this day. An example of the keen rivalry can be seen in a poster shown on p. 330, in which the Cunard Company are advertising the opening of an emigrant service to New York in 1863. They offer a passage for six guineas, including full dietary!

Foreign companies are well represented and the vast, now almost forgotten, fleets of the Hapag and Norddeutscher-Lloyd have a chapter to themselves.

The book is to be recommended for the high quality of its information. The official descriptions of the ships are presented in both an efficient and very readable manner. There are 31 plates, with 53 illustrations, of the various types of ships covered in the book. A. H. W.

Syria, xxix (1952); Le Phare de Laodicée. By Henri Seyrig.

In this valuable study Monsieur Seyrig, a numismatist of international reputation, publishes a new Roman imperial coin of Septimius Severus, and argues convincingly for its attribution to Laodicea, the modern Latakieh. The nautical interest of this paper is that Monsieur Seyrig has found more evidence for the view that Levantine merchantment of the Roman imperial epoch retained the ram. I inclined to this opinion in my notice of Monsieur Seyrig's publication of the magnificent Beth-Maré *ex voto* model (*M.M.* August 1952, p. 246), and it is gratifying that additional support so soon should be forthcoming. Also noteworthy are some excellent aerial photographs of the harbour of Latakieh, which not only give a vivid impression of Levantine shipping, but will interest the naval historian aware of the fact that in the early Middle Ages Latakieh was the base for the powerful Syrian squadron amounting to roughly one-third of the fleet of the Caliphate.

R. H. D.

Sjöhistorisk Årsbok, 1951–1952. Stockholm, 1952.

The Maritime Museum in Stockholm is divided into two sections, the 'National Sea-Historical Museum' and the 'Museum of Seafaring'. The first is a Government institution and deals with fighting ships and their doings; the second is concerned with merchantmen and is under the control of a private body. The present 'Sea-Historical Annual' contains Reports for 1950 and 1951, but these only occupy a few pages. The rest of the volume is devoted to articles on various matters of nautical interest, mainly with a historical or archaeological bias.

The first of these, by G. Halldin, is a long study of the 'boats' depicted in the *hällristningar* (rock-carvings) of southern Scandinavia. Two earlier studies were noticed in the *M.M.* in 1927 and 1934. At the end of the second notice I mentioned that the same designs had been variously interpreted as representing dug-outs with 'bifid' ends, outrigger canoes and real plank-built sailing boats; I might have added skin-boats and double canoes. The present author adopts yet another view, first put forward by Köster in 1934, and makes them rafts with built-up platforms on them, though he admits that this interpretation has not so far been generally accepted. The whole matter is extremely difficult and has produced a body of literature and an amount of disagreement comparable with that caused by triremes. Even if we dislike the author's raft theory, we can certainly be grateful for his mass of illustrations.

The second article, by H. Åkerlund, whose work on the medieval vessels discovered at Kalmar was noticed in 1951, deals with the remains of a vessel found at Falsterbo in the south of Sweden in 1932 within a few yards of the local museum where they are now preserved. What remains is the keel (or most of it), the lower part of the stem, a number of frames and a certain amount of clinker-built planking. All this has been reassembled in a sort of iron cage which gives the general shape of the whole vessel and can, as the author explains, be easily modified in the event of new information becoming available. The date of the vessel has been put at about 1200, both by its own evidence and by pollen-analysis. The keel was about 33 ft. long and the author reckons the ship's dimensions as about 44 ft. by 15 ft. The planking was about 1 in. thick, nailed together, but fastened to the frames by trenails. It is worth mentioning that some planks, though not those which it has been possible to reinstate, show square notches as if for projecting beam-ends.

Rear-Admiral Ekman gives a very detailed account of the commercial aspect of a trading voyage by the Swedish ship *Svan* to the Netherlands in 1546, but has little to say about the actual voyage. He tells us that the ship, one of some 400 tons, had the normal rig of two square sails at the fore and main with a lateen mizzen and a lateen topsail above it. This last was called the 'begarsegel', a word probably related to that found in all the Teutonic languages for the cro'jack yard, 'begynree', 'bagien-raa', etc. Curiously enough Jal almost missed this word and only mentions it very briefly in its German and *Russian* forms, though it occurs constantly in Dutch, Danish and Swedish.

Other contributions describe the marine drawings of Adolf Nordling in the 1870's and 1880's and the experiences of the motorship *Christer Salén*, which broke in half in the Pacific at the end of 1950. Her after half remained tight and was taken back to Yokohama under its own power; a short temporary bow was fitted and the ship, or half ship, was brought safely back to Europe with cargo. Altogether this book caters for a variety of interests. R. C. A.

Salvador de Sá and the Struggle for Brazil and Angola 1602–1686. By C. R. Boxer. University of London, 1952.

Professor Boxer complains in his preface that most of us know very little about the history of Portugal and nothing about that of Brazil. If he had mentioned Angola, he would probably have had to describe our knowledge as a minus quantity. Salvador de Sá held important posts in all three countries and this Life will add to what its author has already written to make us less ignorant then we were. In the sphere of naval history it gives some account of the ebb and flow of the struggle between the Dutch and Portuguese, while the many footnotes tell us where to find more informa-

tion, if we wish. One product of this struggle was the introduction of a system of convoy for the homeward-bound trade from Brazil, and Salvador de Sá was the first 'General' of such a convoy in 1645, though his force of two galleons hardly seems to have justified such a title. He might well have been involved in the Portuguese defeat consequent on an attempt to support a rising against the Dutch in Pernambuco, but had fortunately considered that he had done enough by appearing off Recife and that his real duty was to get home with his convoy.

At a later stage in his career he was responsible for the building of an exceptionally large ship, the *Padre Eterno*, launched at Rio de Janeiro at the beginning of 1664. An account of her arrival in Lisbon in the following year describes her as the largest ship in the world, and though no actual figures are available from Portuguese sources to support this claim, it seems more than likely to have been true. Barlow's Journal contains an illustrated account of her launch with a note that she was 143 ft. on the keel, 15 ft. longer than the *Sovereign*. Without knowing something of Portuguese designs at this period it is impossible to say what length from stem to sternpost this would represent, but it could hardly be less than 180 ft.; she must have been very nearly as large as the *Victory*. Professor Boxer asks how she compared with her French contemporary, the *Saint Philippe*, but really that ship hardly comes within range of comparison and her successor, the *Royal Louis* of 1668, must still have been a good deal smaller than the Portuguese ship. In this connexion it may be noted that the Spaniards had recently built a ship almost as large as the *Sovereign*. Duro mentions her as completing at Pasajes in 1659 and gives her dimensions in a footnote. It seems at least possible that Salvador de Sá had this ship in mind when building his own monster.

R. C. A.

SCIENCE MUSEUM. HANDBOOK OF THE COLLECTIONS ILLUSTRATING MARINE ENGINEERING. By H. P. SPRATT, B.Sc., A.S.M.E. Part 2. Descriptive Catalogue. 160 pages. Her Majesty's Stationery Office, 1953. Price 7*s*. 6*d*.

The title of this catalogue tells the reader exactly what the publication is all about, and little can be added to that, save that it is a well-produced book, clearly printed with thirteen good illustrations in it. At the end is printed a bibliography, which should prove of particular interest to students as well as to the public in general; most of the books mentioned are in the Science Museum Library, which increases the list's value. There are 409 short but clear descriptions of various sorts of machinery from the early paddle-steamer's engines to the latest gas turbine, and included within these limits are all the different 'gadgets' that go to make up that somewhat complicated but efficient piece of machinery, the marine engine.

Each section is introduced by a page or two describing the functions of the parts under review, such as the boiler or the internal combustion engine, and a short history of its development. A very useful addition to the library of anyone interested in the history of mechanical propulsion at sea.

H. O. H.

PUBLICATION RECEIVED

BETWEEN PACIFIC TIDES. By EDWARD F. RICKETTS and JACK CALVIN. Third Edition, revised by JOEL W. HEDGPETH, 1952. Stanford University Press, California, Price $6. Fully illustrated. (London: Geoffrey Cumberlege. English price 48*s*. net.)

The book deals with some 500 kinds of shell-fish, sea-weeds, plankton, etc.

Vol. 10 onwards at 10*s.* 6*d.* each (postage 5*d.*). The index will be supplied free to purchasers of a complete volume or sold separately for 2*s.* each.

Details of back numbers available will be supplied on request. (Published by the Cambridge University Press, 200 Euston Road, London, N.W. 1.)

The following other publications of the Society are at present available for sale:

OCCASIONAL PUBLICATIONS: No. 5, *Lists of Men-of-War*, 1650–1700. *Part I. English Ships.* Compiled by R. C. Anderson. *Part II. French Ships.* Compiled by Pierre Le Conte. *Part III. Swedish Ships.* Compiled by Hj. Börjeson. *Danish-Norwegian Ships.* Compiled by P. Holck. *German Ships.* Compiled by W. Vogel and H. Szymanski. *Part IV. Ships of the United Netherlands.* Compiled by A. Vreugdenhil. *Part V. Indexes.* EACH PART 2*s.* 6*d.* (POSTAGE 2*d.*)

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The Battle of Trafalgar, by Rear-Admiral A. H. Taylor. Price 5*s.*

MARITIME MISCELLANY SERIES, No. 1, *The Van de Veldes*, by W. Voorbeytel Cannenburg.
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PLANS: Model-maker's Plans of the *Victory*, 10 plans on 3 sheets from those used in the restoration of 1923–35. (Price 21*s.*)

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